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Water Resources Data for Ohio

Volume 2. St. Lawrence River Basin

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT OH-78-2

WATER YEAR 1978

Prepared in cooperation with the State of Ohio
and with other agencies

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INFORMATION SERVICE
U. S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

CALENDAR FOR WATER YEAR 1978

1977

OCTOBER

S	M	T	W	T	F	S
						1
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9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

NOVEMBER

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DECEMBER

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1978

JANUARY

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FEBRUARY

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26	27	28	29	30	31	

APRIL

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23	24	25	26	27	28	29
30						

MAY

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28	29	30	31			

JUNE

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25	26	27	28	29	30	

JULY

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16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

AUGUST

S	M	T	W	T	F	S
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6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

SEPTEMBER

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

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Water resources data for the 1978 water year for Ohio consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground-water wells. This report in two volumes contains records for water discharge at 168 gaging stations; stage and contents at 32 lakes and reservoirs; water quality at 58 gaging stations and 54 wells; and water levels at 39 observation wells. Also included are data for 60 crest-stage partial-record stations and 36 low-flow partial-record stations. Additional water data were collected at various sites not involved in the systematic data-collection program and are published as miscellaneous measurements and analyses. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Ohio.

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PREFACE

This report was prepared by personnel of the Ohio district of the Water Resources Division of the U.S. Geological Survey under the supervision of D.E. Click, District Chief, and J.E. Biesecker, Regional Hydrologist, Northeastern Region. It was done in cooperation with the State of Ohio and with other agencies.

This report is one of a series issued by State. General direction for the series is by J.S. Cragwall, Jr., Chief Hydrologist, U.S. Geological Survey, and P. Cohen, Assistant Chief Hydrologist for Scientific Publications and Data Management.

III

Data for Ohio are in two volumes as follows:

Volume 1. Ohio River basin
Volume 2. St. Lawrence River basin

UNITED STATES DEPARTMENT OF THE INTERIOR
CECIL D. ANDRUS, Secretary

GEOLOGICAL SURVEY

H. W. Menard, Director

For information on the water program in Ohio write to
District Chief, Water Resources Division
U.S. Geological Survey
975 West Third Avenue
Columbus, Ohio 43212

1979

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GAGING STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

(Letter after station name designates type of data; (b) biological, (c) chemical, (d) discharge, (e) contents and(or) elevations, (HBM) hydrologic bench mark, (m) microbiological, (NASQAN) National stream-quality accounting network, (r) radiochemical, (s) sediment, (t) temperature.)

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(Letter after station location designates type of data: (c) chemical, (l) water level.)

Well number	Local number	Location	Page
		AUGLAIZE COUNTY	
403403084125700	AU-11	Northwest of Wapakoneta (c)	185
		HANCOCK COUNTY	
405332083421700	HA-15	Southeast of Jenera (lc)	186
		HENRY COUNTY	
412123083574000	HY-2	Southwest of McClure (lc)	187
		LORAIN COUNTY	
411545082072400	LN-1	North of LaGrange (lc)	187
		LUCAS COUNTY	
413704083362200	LU-1	Toledo (lc)	189
		SANDUSKY COUNTY	
41191808304[illegible]100	S-3	Southeast of Fremont (lc)	190
		WILLIAMS COUNTY	
412853084[illegible]22000	WM-10	Bryan (c)	191
41310808[illegible]415300	WM-12	East of Blakeslee (lc)	192

INTRODUCTION

Water resources data for the 1978 water year for Ohio consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground water. This report, in two volumes, contains discharge records for 166 gaging stations; stage and contents for 32 lakes and reservoirs; water quality for 50 gaging stations, and 54 wells; and water levels for 39 observation wells. Also included are 59 crest-stage partial-record stations and 35 low-flow partial-record stations. Additional water data were collected at various sites, not involved in the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Ohio.

Records of discharge or stage of streams, and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from Branch of Distribution, U.S. Geological Survey, 1200 South Eads Street, Arlington, VA 22202.

For water years 1961 through 1974, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1964 through 1974 were similarly released either in separate reports or in conjunction with streamflow records. Beginning with the 1975 water year, water data for streamflow, water quality, and ground water are published as an official Survey report on a State-boundary basis. These official Survey reports carry an identification number consisting of the two letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report OH-78-2." Water-Data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Va. 22161.

COOPERATION

The U.S. Geological Survey and organizations of the State of Ohio have had cooperative agreements for the systematic collection of streamflow records since 1898, for ground-water levels since 1936, and for water-quality records since 1946. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Ohio Department of Natural Resources, R.W. Teater, director, through Division of Water, W.S. Nichols, chief.

Ohio Environmental Protection Agency, J.F. McAvoy, director, through Division of Surveillance and Laboratory Services, Gary Martin, chief.

Ohio Department of Transportation, D.L. Weir, director, through Division of Highway, L.R. Talbert, engineer for research and development.

Miami Conservancy District, L.B. Coy, general manager and secretary.

Three Rivers Watershed District, G.H. Watkins, secretary-treasurer.

City of Columbus Department of Public Service, R.C. Parkinson, director, through Division of Water, Jack Holt, superintendent.

City of Canton Water Department, J.D. Williams, superintendent.

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army in collecting records for 146 hydrologic-data stations in this report, and by the Environmental Protection Agency for 8 stations.

Organizations that supplied data are acknowledged in station descriptions.

HYDROLOGIC CONDITIONS

At the start of the 1978 water year, streamflow was normal in the northwest and excessive in the remainder of the State. Above normal precipitation during the fall months increased streamflow until all index stations were reporting runoff well above average. Minor flooding resulted from rain and snow melt throughout the State December 18-21.

Runoff remained near normal during January, except in the eastern portion where it was excessive for the seventh consecutive month. Severe winter conditions resulted in deficient runoff during February, except in the east where it was normal.

Rain and snow melt caused minor flooding throughout the State during March. Heavy rain and snow melt in Indiana and Michigan caused minor flooding in northwest Ohio on March 22-24. This produced a peak of record on the Maumee River at Waterville.

Streamflow was normal for April except in the northwest where it was excessive. Moderate precipitation resulted in normal runoff throughout the State during May and June except in the east where it was excessive. A local rain in excess of seven inches on June 17-18 caused a flash flood with minor property damage in Perry County.

During July excessive runoff occurred in east and northwest Ohio and was normal elsewhere. Streamflow for August was normal in the northwest and central portions of the State and excessive in the southwest and eastern areas. Increased precipitation resulted in excessive runoff in all but northwestern Ohio at the close of the water year.

Ground-water levels in general reflected seasonal changes during the first quarter of the water year. The last three quarters reflected higher than normal conditions with the northeastern area recording a record high at the end of December and during January.

NOTICE

During water year 1978, revisions were made in the terminology used to define 139 of the water-quality parameter codes that have been used by the Geological Survey in its publication of water-quality data and in its WATSTORE data system. These revisions were made to achieve consistency in terminology and to conform to a joint USGS-EPA agreement on terminology. They do not represent a change in the way the codes have been used in the past or in the association of specific code numbers with identified analytical procedures.

Use of the new terminology began with data for the 1978 water year, and therefore, it first appears in this publication. Definitions on which the terminology is based are included in the "Definitions" section of this report, and a table showing both old and new terminology is attached as an appendix to the report.

DEFINITION OF TERMS

Terms related to streamflow, water quality, and other hydrologic data, as used in this report, are defined below. See also the table for converting English units to International System of units (SI) on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer, tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as the organisms which produce colonies within 24 hours when incubated at 35°C ± 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C ± 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C ± 1.0°C on M-enterrococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Cfs-day is the volume of water represented by flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons or 2,447 cubic meters.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll *a* and *b* are the two most common pigments in plants.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of salt water.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foot per second (FT^3/s, ft^3/s, cfs) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment), that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved.--That material in a representative water sample which passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Drainage area of a stream at a specific location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontribution area, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate (CaCO).

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per gram (UG/G, μg/g) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Micrograms per kilogram (UG/KG, μg/kg) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (kilogram) of bottom material.

Micrograms per liter (UG/L, μg/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L, and is based on the mass of sediment per liter of water-sediment mixture.

National Geodetic Vertical Datum of 1929 (NGVD) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meters (m^2), acres, or hectares. Periphyton benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliters (mL) or liters (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle-size is the diameter, in millimeters (mm), of suspended sediment or bed material determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology.

The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay..........	0.00024 - 0.004	Sedimentation.
Silt..........	.004 - .062	Sedimentation.
Sand..........	.062 - 2.0	Sedimentation or sieve.
Gravel........	2.0 - 64.0	Sieve.

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, number, mass or volume.

Periphyton is the assemblage of microorganisms attached to and growing upon solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton is a useful indicator of water quality.

Pesticides are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides, which control insects and plants respectively, are the two categories reported.

Picocurie (PC,pCi) is one trillionth (1 x 10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7 x 10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment, and are commonly known as algae.

Recoverable from bottom material.--The amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of only readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Suspended-sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge times mg/L times 0.0027.

Suspended-sediment load is the quantity of suspended sediment passing a section in a specified period.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry weight or volume, that passes a section during a given time.

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in micromhos per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of the total concentration in a water-sediment mixture. The water-sediment mixture is associated with (or sorbed on) that material retained on a 0.45-micrometer filter.

Suspended, recoverable.--The amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45-micrometer membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total.--The total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per day is the quantity of substance in solution or suspension that passes a stream section during a 24-hour day.

Total..--The total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the ananalytical method determines all of the constituent in the sample.)

Total in bottom material.--The total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

Total, recoverable.-- The amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual basic-data reports published after 1975.

WRD is used as an abbreviation for "Water-Resources Data" in the REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indention in a list of stations in the front of the report. Each indention represents one rank. This downstream order and system of indention show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station such as 04041000, which appears just to the left of the station name, includes the 2-digit part number "04" plus the 6-digit downstream order number "041000."

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The 8-digit downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, the next 7 digits denote degrees, minutes, and seconds of longitude, and the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid. See figure 1.

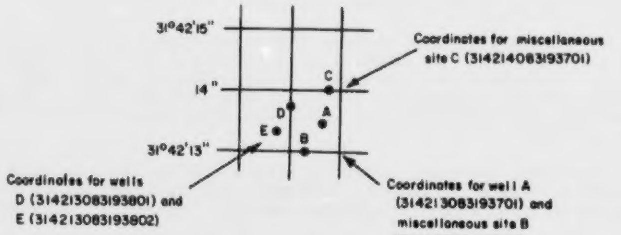
31°42'15"
Coordinates for miscellaneous site C (314214083193701)
C
14"
D
A
E
B
31°42'13"
Coordinates for wells D (314213083193801) and E (314213083193802)
Coordinates for well A (314213083193701) and miscellaneous site B (314213083193702)

Figure 1.--System for numbering wells and miscellaneous sites (latitude and longitude)

SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

National stream-quality accounting network (NASQAN) is a data collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard text-books, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), step-back water techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage height and rating tables, then the monthly and yearly mean discharge are computed from the daily figures. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some stream-gaging stations, the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

At some northern stream-gaging stations, the stage-discharge relation is affected by ice in the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge for other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly change in contents is computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations in the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes and reservoirs, a monthly summary table of stage and contents is given. Records are published for the water year, which begins on October 1 and ends on September 30.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge and extremes of discharge or contents. The location of the gaging station and the drainage area are obtained from the most accurate maps available. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use, the datum of the present gage referred to National Geodetic Vertical Datum; and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." National Geodetic Vertical Datum is explained in "DEFINITION OF TERMS" on page 4.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station is given under "REMARKS." For reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. Under "EXTREMES" are given first, the extremes for period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with "EXTREMES FOR THE CURRENT YEAR"; if they are, all independent peaks, including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion. In the yearly summary, below the monthly summary the figures shown are the appropriate daily discharges for the calendar and water years.

Footnotes to the table of daily discharge are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

Data collected at partial-record stations follow the information for continuous record sites. Data for partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. Occasionally, a series of discharge measurements are made or water-quality samples are taken to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements and chemical analyses are also given in special tables following the tables of partial-record stations.

For gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents.

Accuracy of field data and computed results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good", within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 cfs; to tenths between 1.0 and 10 cfs; to whole numbers between 10 and 1,000 cfs; and to 3 significant figures above 1,000 cfs. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other data available

Information of a more detailed nature than that published for most of the gaging stations such as observations of water temperatures, discharge measurements, gage-height records, and rating tables is on file in the district office. Also most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the district office.

Records of discharge collected by agencies other than the Geological Survey

Records of discharge not published by the Geological Survey were collected during water year 1978 at many sites in Ohio by the National Weather Service, NOAA, U.S. Department of Commerce, by the Corps of Engineers, U.S. Army and by other agencies. The National Water Data Exchange, Water Resources Division, U.S. Geological Survey, National Center, Reston, Va. 22092, maintains an index of such sites. Information on records available at specific sites can be obtained upon request.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, pH, dissolved oxygen, water temperature, sediment discharge, etc.); extremes for the period of daily record; extremes for the current year; and general remarks.

For ground-water records, descriptive statements are given; the well number, depth of well, date of sampling and/or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations listed on a following page.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum and minimum values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the district office.

Water temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small daily temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, maximum and minimum temperatures for each day are published.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection of the data

Ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude and (2) a local number that is provided for local needs. See figure 2.

Measurements are made in many types of wells, under varying conditions of access and at different temperatures, hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Water-level measurements in this report are given in feet with reference to either mean sea level (msl) or land-surface datum (lsd). Mean sea level is the datum plane on which the national network of precise levels is based; land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum above mean sea level is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description.

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between sucessive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-four manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 1200 South Eads Street, Arlington, VA 22202 (authorized agent of the Superintendent of Documents, Government Printing Office. Prices are effective October 1978 but are subject to change.

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

1-D1. *Water temperature-influential factors, field measurement, and data presentation,* by H. H. Stevens Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages. $1.60.

1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents,* by W.W.Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages. $0.85

2-D1. *Application of surface geophysics to ground-water investigations,* by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages. $1.90.

2-E1. *Application of borehole geophysics to water-resources investigations,* by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages. $1.75.

3-A1. *General field and office procedures for indirect discharge measurements,* by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages. $1.00.

3-A2. *Measurement of peak discharge by the slope-area method,* by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages. $0.35.

3-A3. *Measurement of peak discharge at culverts by indirect methods,* by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages. $0.40.

3-A4. *Measurement of peak discharge at width contractions by indirect methods,* by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages. $1.00.

3-A5. *Measurement of peak discharge at dams by indirect methods,* by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages. $0.35.

3-A6. *General procedure for gaging streams,* by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6, 1968, 13 pages. $1.00.

3-A7. *Stage measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages. $1.40.

3-A8. *Discharge measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages. $1.25.

3-A11. *Measurement of discharge by moving-boat method,* by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages. $1.20.

3-A12. *Fluorometric procedures for dye tracing,* by J. F. Wilson Jr.: USGS--TWRI Book 3, Chapter A12. 1968. 31 pages. $0.35. Not currently available.

3-B1. *Aquifer-test design, observation, and data analysis,* by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages. $0.70.

3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction,* by G. D. Bennett: USGS--TWRI Book 3, Chapter B2 1976. 172 pages. $2.50.

3-C1. *Fluvial sediment concepts,* by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages. $2.50.

3-C2. *Field methods for measurement of fluvial sediment,* by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2, 1970. 59 pages. $2.50.

3-C3. *Computation of fluvial-sediment discharge,* by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages. $2.10.

4-A1. *Some statistical tools in hydrology,* by H. C. Riggs: USGS--TWRI Book 4 Chapter A1. 1968. 39 pages. $1.60.

4-A2. *Frequency curves,* by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages. $1.20

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4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972, 18 pages. $0.65.

4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages. $0.75.

4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages. $0.65.

4-D1. *Computation of rate and volume of stream depletion by wells*, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages. $1.10.

5-A1. *Methods for collection and analysis of water samples for dissolved minerals and gases*, by Eugene Brown, M. W. Skougstad, and M. J. Fishman: USGS--TWRI Book 5, Chapter A1. 1970. 160 pages. $2.40.

5-A2. *Determination of minor elments in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages. $0.80.

5-A3. *Methods for analysis of organic substances in water*, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages. $0.90.

5-A4.* *Methods for collection and analysis of aquatic biological and microbiological samples*, edited by P.E. Greeson, T.A. Ehlke, G.A. Irwin, B.W. Lium, and K.V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages. $20.00.

5-A5.* *Methods for determination of radioactive substances in water and fluvial sediments*, by L.L. Thatcher, V.J. Janzer, and K.W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages. $16.00.

5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages. $2.10.

7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages. $2.30.

8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages. $0.70.

8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages. $1.10.

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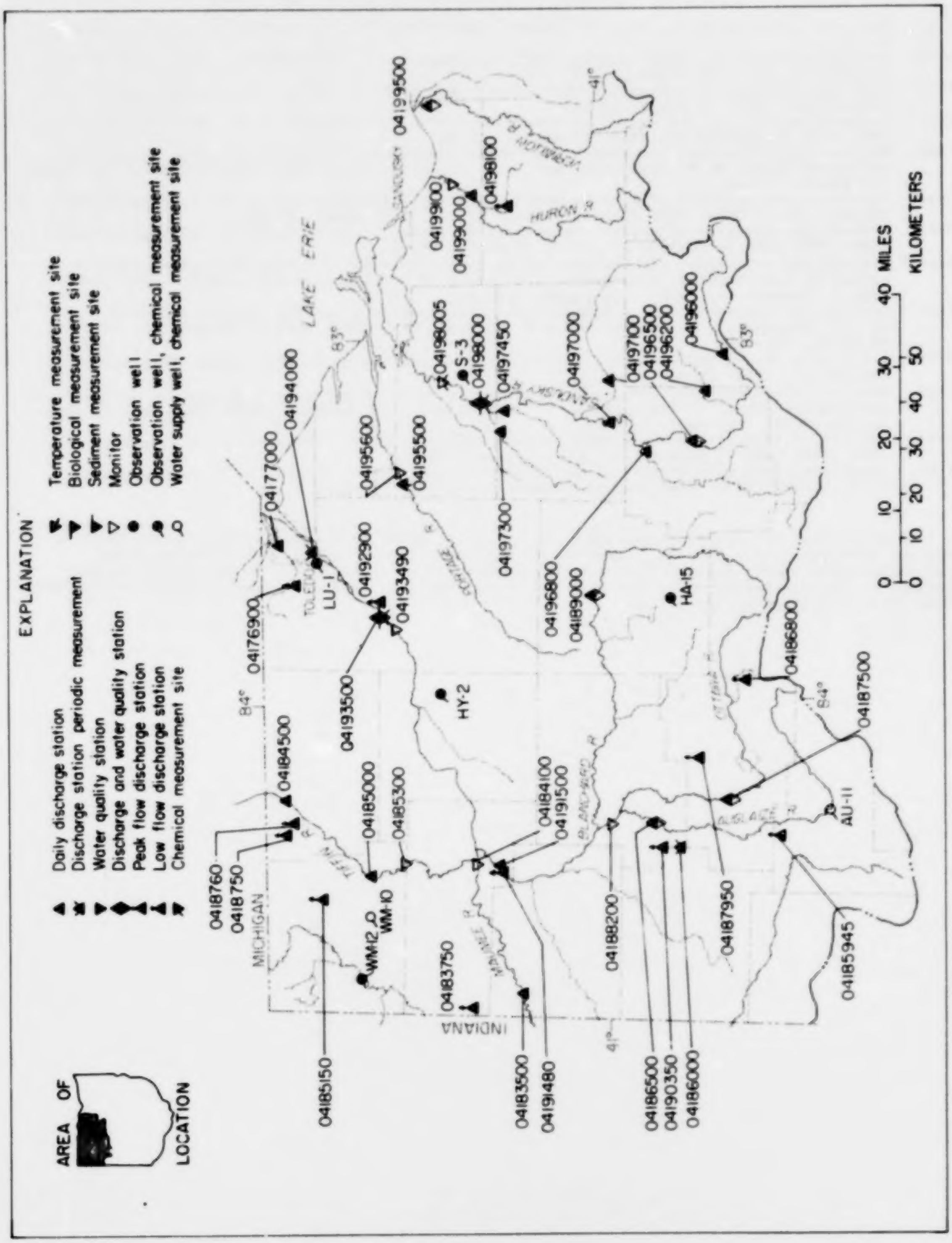
EXPLANATION
Daily discharge station
Discharge station periodic measurement
Water quality station
Discharge and water quality station
Peak flow discharge station
Low flow discharge station
Chemical measurement site
Temperature measurement site
Biological measurement site
Sediment measurement site
Monitor
Observation well
Observation well, chemical measurement site
Water supply well, chemical measurement site
AREA OF LOCATION
MICHIGAN
INDIANA
LAKE ERIE
TOLEDO
84°
83°
41°
0 10 20 30 40 MILES
0 10 20 30 40 50 KILOMETERS
04185150
04183750
04183500
04191480
04186500
04190350
04186000
04185945
04188200
04187950
04187500
04184100
04191500
04185300
04185000
04184500
04188760
04188750
WM12
WM-10
HY-2
04193500
04193490
04192900
04176900
LU-1
04177000
04194000
04195600
04195500
04197300
04196800
04189000
HA-15
04186800
AU-11
04197450
04198000
S-3
04198005
04197000
04197100
04196500
04196200
04196000
04199000
04199100
04198100
04199500
MAUMEE R.
TIFFIN R.
BLANCHARD R.
AUGLAIZE R.
OTTAWA R.
PORTAGE R.
SANDUSKY R.
HURON R.
VERMILION R.

Figure 2a.--Location of data-collection stations.

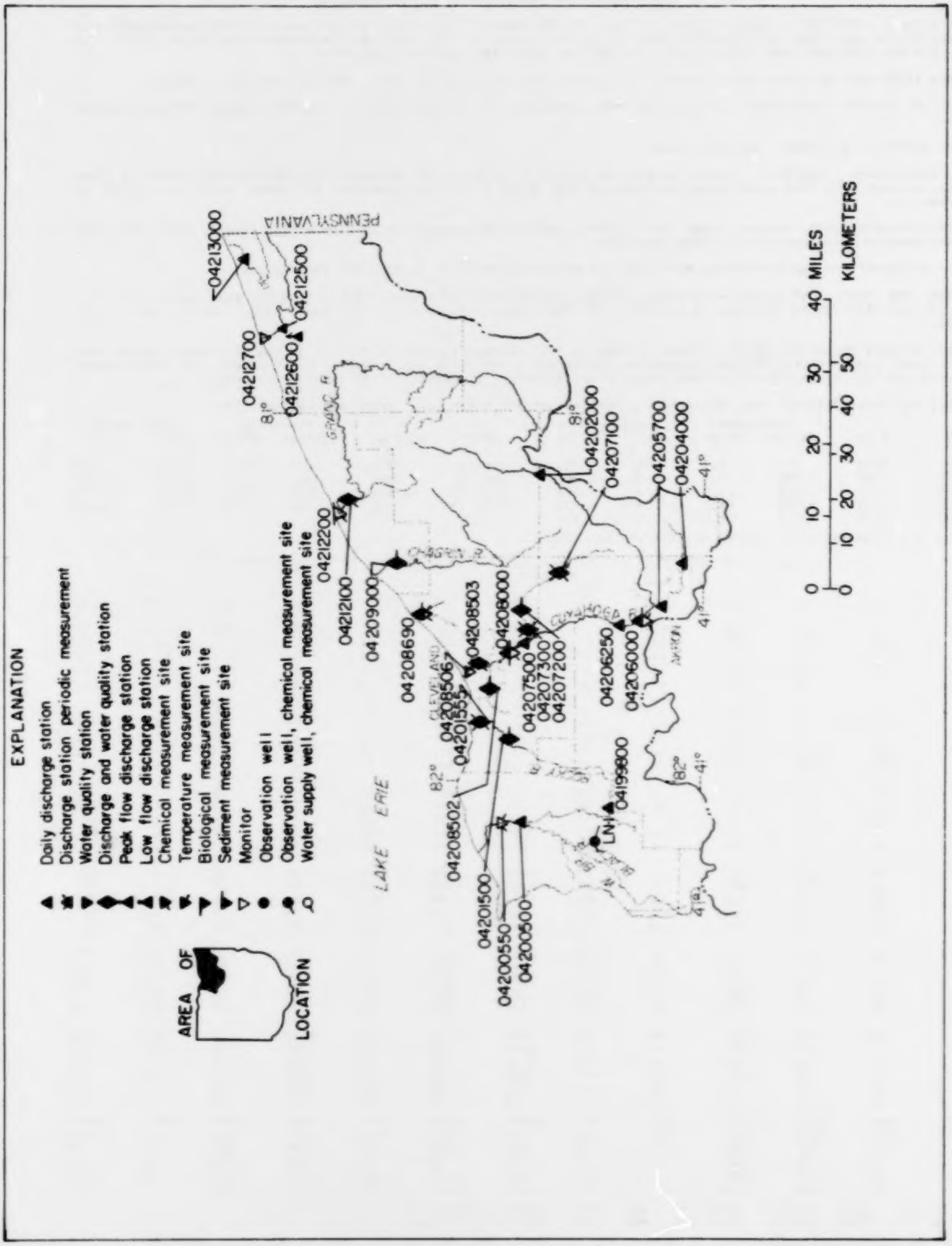
AREA OF LOCATION
EXPLANATION
Daily discharge station
Discharge station periodic measurement
Water quality station
Discharge and water quality station
Peak flow discharge station
Low flow discharge station
Chemical measurement site
Temperature measurement site
Biological measurement site
Sediment measurement site
Monitor
Observation well
Observation well, chemical measurement site
Water supply well, chemical measurement site
LAKE ERIE
PENNSYLVANIA
CLEVELAND
AKRON
CHAGRIN R.
GRAND R.
CUYAHOGA R.
ROCKY R.
BLACK R.
04213000
04212500
04212700
04212600
04212200
04212100
04209000
04208690
04208503
04208506
04201555
04208000
04207500
04207300
04207200
04202000
04207100
04205700
04204000
04206250
04206000
04199800
LNI
04208502
04201500
04200550
04200500
81°
82°
41°
0 10 20 30 40 MILES
0 10 20 30 40 50 KILOMETERS

Figure 2b.--Location of data-collection stations.

04177000 OTTAWA RIVER AT TOLEDO UNIVERSITY, TOLEDO, OH

LOCATION.--Lat 41°39'07", long 83°36'40", in NE 1/4 sec. 32, T.9 S., R.7 E., Lucas County, Hydrologic Unit 04100001, in pump house at Toledo University, Toledo, Ohio., 0.5 mi (0.8 km) downstream from Deline Ditch, 5.5 mi (8.8 km) upstream from Sibley Creek, and 10.8 mi (17.4 km) upstream from mouth.

DRAINAGE AREA.--150 mi² (388 km²). Area at site used prior to Sept. 30, 1948, 150 mi² (388 km²), revised.

PERIOD OF RECORD.--March 1945 to September 1948 (published as "Tenmile Creek at Toledo"), August 1976 to current year.

REVISED RECORDS.--WSP 1307: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 576.28 ft (175.650 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1948 water-stage recorder at site 3,000 ft (914 m) upstream at datum 3.72 ft (1.134 m) higher.

REMARKS.--Records good except those for winter periods and periods cf no gage height record, which are fair. Water-quality data collected at this site 1977.

AVERAGE DISCHARGE.--5 years(1946-48, 1977, 78) 113 ft³/s (3.200 m³/s) 10.23 in/yr (260 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3330 ft³/s (94.3 m³/s) Mar. 22, 1978, gage height, 13.70 ft (4.176 m); minimum, no flow Aug. 24 to Sept. 19, 1945, July 7-15, Aug. 12-15, Sept. 1-9, 16-22, Oct. 5-10, 1946.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1943 reached a stage of 15.1 ft (4.602 m) present datum, from floodmark, Lucas County Sanitary Engineers, discharge, 3,400 ft³/s (96.3 m³/s). Flood of Apr. 25, 1950 reached a stage of 15.0 ft (4.572 m) present datum, from floodmark, discharge, 3,300 ft³/s (93.5 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 ft³/s (22.7 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 2	1230	814	23.1	7.85	2.393	Apr. 5	1830	1240	35.1	9.56	2.914
Dec. 16	0500	1190	33.7	9.40	2.865	Apr. 7	1400	1380	39.1	10.01	3.051
Dec. 19	1430	1290	36.5	9.71	2.960	June 27	unknown	2400	68.0	12.20	3.719
Mar. 22	1900	*3330	94.3	*13.70	4.176	June 28	1630	1360	38.5	10.08	3.072
Mar. 28	1430	1210	34.3	9.47	2.886						

Minimum daily discharge, 3.8 ft³/s (0.11 m³/s) Aug. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	171	41	331	50	38	24	564	55	33	142	12	6.4
2	244	42	739	53	37	24	396	51	32	231	12	7.0
3	159	41	427	49	37	24	303	61	31	229	11	7.0
4	98	42	213	44	37	24	451	46	31	175	11	6.8
5	73	42	148	41	36	24	1080	50	30	110	12	6.7
6	79	40	92	42	35	24	983	54	30	74	14	6.7
7	85	50	80	43	35	24	1290	47	30	53	20	6.7
8	99	47	75	46	34	24	896	44	35	42	110	6.7
9	385	52	70	47	34	24	404	46	44	37	60	6.7
10	399	108	65	50	33	26	309	51	37	34	25	6.8
11	157	151	60	49	32	29	428	45	33	30	16	8.0
12	117	87	60	48	32	40	429	42	33	25	14	79
13	96	58	60	47	31	70	257	44	34	22	12	48
14	73	46	200	46	30	250	194	130	34	22	10	29
15	65	51	987	44	29	626	175	420	32	53	9.6	20
16	59	57	1130	43	29	892	165	380	31	92	10	12
17	53	58	982	42	28	1160	150	330	30	26	10	30
18	50	65	1030	42	28	1210	140	260	28	19	9.7	20
19	51	60	1240	42	27	1150	160	170	28	17	9.2	16
20	50	74	982	42	26	1280	200	120	27	16	8.7	11
21	46	130	877	42	26	2280	260	90	27	15	7.9	9.0
22	44	142	437	41	26	3090	290	75	27	15	7.7	8.7
23	44	105	244	41	25	2580	240	68	27	14	7.6	8.1
24	42	91	228	40	25	1600	210	64	27	14	7.6	7.4
25	42	84	260	43	25	899	175	62	40	13	8.0	7.0
26	42	82	230	48	25	653	130	48	1000	13	8.6	7.0
27	42	68	170	45	25	1040	95	42	2400	13	8.5	7.1
28	42	64	130	42	25	1200	80	40	1210	13	13	7.1
29	41	54	100	41	---	1060	70	38	665	12	7.2	6.2
30	41	71	74	40	---	723	62	36	237	12	3.9	8.3
31	40	---	60	39	---	539	---	34	---	12	3.8	---
TOTAL	3029	2103	11781	1372	850	22613	10586	3043	6303	1595	480.0	416.4
MEAN	97.7	70.1	380	44.3	30.4	729	353	98.2	210	51.5	15.5	13.9
MAX	399	151	1240	53	38	3090	1290	420	2400	231	110	79
MIN	40	40	60	39	25	24	62	34	27	12	3.8	6.2
CFSM	.65	.47	2.53	.30	.20	4.86	2.35	.66	1.40	.34	.10	.09
IN.	75	.52	2.92	.34	.21	5.61	2.63	.75	1.56	.40	.12	.10

CAL YR 197 TOTAL 56135.1 MEAN 154 MAX 2360 MIN 4.7 CFSM 1.03 IN 13.92
WTR YR 197 TOTAL 64171.4 MEAN 176 MAX 3090 MIN 3.8 CFSM 1.17 IN 15.91

Note: No gage-height record Dec. 10 to Dec. 14, Jan. 26 to Feb. 22, May 8 to May 24, May 27 to June 28, July 19 to Aug. 24.

04183500 MAUMEE RIVER AT ANTWERP, OH

LOCATION.--Lat 41°11'56", long 84°44'40", in sec. 22,T. 3N., R.1 E., Paulding County, Hydrologic Unit 04100005, on left bank 425 ft (130 m) downstream from bridge on State Highway 49, 1 mi (2 km) north of Antwerp, 7 mi (11 km) downstream from Indiana State line and 10 mi (16 km) upstream from Marie DeLarme Creek.

DRAINAGE AREA.--2,129 mi² (5,514 km²).

PERIOD OF RECORD.--September 1921 to December 1935, April 1939 to current year.

REVISED RECORDS.--WSP 1174: 1927, 1933, 1940. WSP 1387: 1922-23, 1925-27, 1934. WDR OH-70-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 694.90 ft (211.805 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 13, 1925, nonrecording gage at site 400 ft (122 m) upstream at same datum.

REMARKS.--Records good except those for winter period, which are fair. Low flow slightly regulated by powerplant at Fort Wayne, Indiana, 32 mi (51.5 km) upstream. Flow slightly regulated by upstream reservoirs. Water quality data collected at this site 1969 to 1977.

AVERAGE DISCHARGE.--53 years, 1,684 ft³/s (47.69 m³/s), 10.75 in/yr (273 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,200 ft³/s (742 m³/s) May 20, 1943, gage height, 20.29 ft (6.184 m); minimum daily, 26 ft³/s (0.74 m³/s) July 28, 1933.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 27, 1913, estimated as 40,000 ft³/s (1,130 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 8,000 ft³/s (227 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 21	1100	14400	408	16.03	4.886	Apr. 8	0200	13000	368	15.12	4.609
Mar. 23	0400	*21300	603	*19.55	5.959						

Minimum daily discharge: 108 ft³/s (3.06 m³/s) Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	565	343	2200	1000	540	400	11500	1660	667	1570	218	242
2	704	600	5550	850	520	400	9500	1420	639	2290	223	208
3	866	424	5040	700	500	400	8180	1220	581	2830	226	140
4	787	392	3720	580	490	400	7600	1010	560	3310	204	154
5	551	397	2980	920	480	400	7630	982	456	3250	131	161
6	474	369	2480	1000	480	400	6680	984	485	2780	135	153
7	447	353	1860	920	470	400	12500	927	444	2360	183	187
8	444	353	1140	980	476	390	12900	904	705	2170	613	135
9	649	350	1070	1100	460	390	12300	930	691	1740	531	129
10	616	388	1000	980	460	390	10800	925	698	1310	418	121
11	715	406	980	880	460	390	10800	902	512	971	403	132
12	670	323	1500	820	460	400	9170	851	500	777	366	108
13	510	448	2280	760	450	540	6470	1070	440	581	337	137
14	466	381	4370	720	440	1500	4980	2010	492	660	249	324
15	445	377	10300	700	440	8200	4810	2940	408	490	212	366
16	409	403	10600	650	440	12400	3620	3400	406	389	172	344
17	392	410	10400	600	430	14800	2730	2940	418	468	193	234
18	345	491	12200	580	430	15500	2430	2320	381	386	213	274
19	408	572	13800	550	430	15000	3620	2270	369	365	373	309
20	301	582	14000	520	430	14100	5470	1780	343	285	599	319
21	371	570	14400	490	420	17100	7580	2850	365	343	456	286
22	212	652	14000	470	426	20400	8580	2510	317	275	271	267
23	337	734	12500	430	420	21200	5440	1590	276	256	209	177
24	409	654	9990	420	410	21000	4910	1770	277	376	197	177
25	349	612	8050	480	410	20600	4740	1480	296	427	165	186
26	329	635	6470	540	410	19700	4270	1350	316	316	184	146
27	414	624	4190	600	420	17800	3170	1200	417	298	170	191
28	463	572	2700	600	410	16000	2720	1210	720	282	376	117
29	279	559	2000	580	---	14800	1870	1140	1070	239	455	158
30	284	457	1600	560	---	13800	1920	949	1290	205	340	158
31	277	---	1300	540	---	12800	---	969	---	186	251	---
TOTAL	14488	14431	184670	21520	12612	282500	198110	48463	15539	32185	9073	6030
MEAN	467	481	5957	694	450	9113	6604	1563	518	1038	293	201
MAX	866	734	14400	1100	540	21200	12900	3400	1290	3310	613	366
MIN	212	323	980	420	410	390	1870	851	276	186	131	108
CFSM	.22	.23	2.80	.33	.21	4.28	3.10	.73	.24	.49	.14	.09
IN.	.25	.25	3.23	.38	.22	4.94	3.46	.85	.27	.56	.16	.11

CAL YR 1977 TOTAL 618898 MEAN 1696 MAX 14400 MIN 130 CFSM .80 IN 10.81
WTR YR 1978 TOTAL 839621 MEAN 2300 MAX 21200 MIN 108 CFSM 1.08 IN 14.67

04184100 MAUMEE RIVER AT DEFIANCE, OH

LOCATION.--Lat 41°16'43", long 84°23'07", Defiance County, Hydrologic Unit 04100005, at waterworks on right bank at Defiance, about 300 ft (91 m) upstream from Tiffin River, and 1.8 mi (2.9 km) upstream from Auglaize River.

DRAINAGE AREA.--2,316 mi² (5,998 km²).

PERIOD OF RECORD.--Water years 1966 to September 1978 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1966 to September 1978 (discontinued).
pH: November 1973 to September 1978 (discontinued).
DISSOLVED OXYGEN: January 1966 to September 1978 (discontinued).

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Dissolved oxygen concentrations listed as 15.0 mg/L represent concentrations of 15.0 mg/L or higher due to instrument limitations prior to Feb. 28, 1978; 20.0 mg/L limitation thereafter. No discharge records available.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,350 micromhos Jan. 24, 1970; minimum, 210 micromhos Jan. 30, 1969, Feb. 8, 9, 1971.
pH: Maximum, 9.2 units Oct. 7, 1975, Sept. 3-5, 1978; minimum, 6.6 units Nov. 26, 29, 1974.
WATER TEMPERATURES: Maximum, 32.0°C July 3, 1966; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 20.0 mg/L or higher June 14, 1978; minimum, 0.2 mg/L Aug. 23, 1966.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,010 micromhos Mar. 10-12; minimum, 252 micromhos Mar. 22, 23.
pH: Maximum, 9.2 units Sept. 3-5; minimum, 7.6 units Oct. 1, Dec. 16-21, 28, Jan. 29-31, Feb. 1, 3-5, Sept. 13, 15.
WATER TEMPERATURES: Maximum, 31.0°C July 22; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 20.0 mg/L or higher June 14; minimum, 3.5 mg/L June 26.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	639	615	798	783	696	492	642	624	---	---	945	930
2	633	615	783	720	957	471	654	639	---	---	939	930
3	639	618	795	723	882	546	675	657	---	---	942	930
4	657	618	807	795	795	483	696	675	---	---	939	927
5	687	633	804	765	582	552	705	696	---	---	945	912
6	654	594	762	732	594	516	711	705	---	---	972	939
7	621	594	798	765	582	561	738	705	---	---	978	963
8	633	618	807	792	609	579	717	708	---	---	984	960
9	615	588	816	804	639	609	717	687	---	---	993	966
10	633	591	867	780	---	---	717	696	903	843	1010	978
11	717	636	795	765	---	---	---	---	957	855	1010	978
12	732	708	813	774	---	---	840	783	---	---	1010	987
13	744	732	816	813	---	---	840	828	---	---	990	972
14	747	708	822	795	717	570	---	---	---	---	969	693
15	708	702	888	801	672	540	---	---	---	---	732	630
16	708	708	855	831	552	399	---	---	861	858	636	372
17	717	705	873	852	396	381	---	---	858	816	363	300
18	708	702	861	834	393	357	---	---	---	---	300	285
19	723	708	834	828	360	345	---	---	---	---	294	279
20	747	723	834	804	357	354	---	---	---	---	291	282
21	762	747	801	783	360	354	---	---	---	---	288	258
22	765	762	783	774	375	360	---	---	---	---	258	252
23	774	720	792	774	384	375	---	---	924	909	258	252
24	783	756	792	765	405	384	---	---	927	915	264	258
25	774	720	780	720	447	408	---	---	933	921	273	264
26	774	762	750	726	471	447	816	795	936	924	282	270
27	783	762	741	711	495	459	825	816	939	921	297	282
28	783	762	726	699	522	492	840	822	945	933	327	300
29	789	759	843	711	567	522	840	828	---	---	342	327
30	795	789	753	705	582	561	---	---	---	---	348	342
31	798	789	---	---	621	576	---	---	---	---	360	345
MONTH	798	588	888	699	957	345	840	624	957	816	1010	252

04184100 MAUMEE RIVER AT DEFIANCE, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	375	363	654	618	699	678	777	672	627	603	747	612
2	390	378	654	639	702	687	708	654	648	630	603	531
3	399	387	666	642	702	696	642	465	645	612	570	543
4	414	402	666	651	741	702	483	420	627	600	576	549
5	423	411	672	654	747	729	492	417	624	606	567	546
6	429	363	687	672	744	699	546	495	633	618	573	552
7	372	363	705	690	765	702	513	501	621	606	564	552
8	360	342	723	690	768	753	525	507	621	603	---	---
9	339	333	720	714	777	756	540	525	660	621	---	---
10	381	342	---	---	792	777	558	534	795	645	---	---
11	390	354	---	---	783	747	573	558	---	---	---	---
12	411	390	---	---	774	768	591	570	---	---	---	---
13	444	411	---	---	771	732	606	588	---	---	---	---
14	465	444	---	---	783	729	621	597	---	---	---	---
15	486	453	---	---	783	732	630	618	---	---	---	---
16	519	474	597	582	786	768	639	621	---	---	840	810
17	531	492	579	561	783	729	654	576	---	---	894	843
18	546	513	591	570	813	756	600	573	---	---	891	810
19	555	513	621	585	768	690	630	585	---	---	804	723
20	513	426	636	591	---	---	594	507	---	---	759	708
21	462	420	621	585	---	---	564	465	---	---	699	672
22	462	414	621	600	699	666	543	492	---	---	768	696
23	471	423	594	483	738	696	621	543	810	780	768	720
24	498	471	585	516	735	720	627	597	798	723	726	720
25	501	477	627	591	738	717	669	627	720	669	726	687
26	492	474	660	627	---	---	741	675	705	669	690	675
27	528	492	672	663	741	690	768	729	714	690	708	681
28	570	528	672	660	756	711	753	711	708	690	702	684
29	597	567	693	675	783	714	714	660	702	660	729	702
30	615	600	720	693	819	783	654	600	750	660	741	723
31	---	---	738	702	---	---	603	597	774	747	---	---
MONTH	615	333	738	483	819	666	777	417	810	600	894	531
YEAR	1010	252										

04184100 MAUMEE RIVER AT DEFIANCE, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.1	7.6	8.8	8.6	8.4	8.1	7.9	7.8	7.9	7.6	7.8	7.8
2	8.1	8.1	8.8	8.6	8.1	7.9	7.9	7.9	7.8	7.7	7.8	7.8
3	8.2	8.1	8.6	8.2	8.0	7.9	7.9	7.9	7.7	7.6	7.8	7.7
4	8.2	8.1	8.2	8.1	8.0	7.9	7.9	7.8	7.6	7.6	7.8	7.7
5	8.2	7.9	8.3	8.2	8.0	7.9	7.8	7.8	7.7	7.6	7.8	7.7
6	8.2	8.1	8.4	8.2	8.1	8.0	7.8	7.8	8.0	7.7	7.7	7.7
7	8.2	8.2	8.3	8.2	8.1	8.1	7.8	7.8	8.0	8.0	7.7	7.7
8	8.3	8.1	8.2	8.1	8.1	8.1	7.8	7.8	8.0	7.9	7.7	7.7
9	8.3	8.3	8.2	8.0	8.1	8.1	7.8	7.8	7.9	7.9	7.7	7.7
10	8.3	8.2	8.3	8.2	8.1	8.1	7.8	7.8	7.9	7.8	7.7	7.7
11	8.3	8.2	8.4	8.3	8.1	8.0	---	---	7.8	7.8	7.7	7.7
12	8.3	8.2	8.5	8.4	8.1	8.0	8.0	7.8	7.8	7.8	7.8	7.7
13	8.5	8.3	8.5	8.4	8.0	7.9	8.0	7.8	7.8	7.8	7.7	7.7
14	8.7	8.5	8.5	8.5	7.9	7.9	7.8	7.8	7.8	7.8	7.8	7.7
15	8.6	8.5	8.5	8.5	7.9	7.8	7.8	7.8	7.8	7.8	7.8	7.7
16	---	---	8.5	8.4	7.8	7.6	7.8	7.7	7.8	7.8	7.8	7.8
17	8.6	8.5	8.5	8.3	7.6	7.6	7.8	7.7	7.8	7.8	7.8	7.8
18	8.6	8.5	8.5	8.4	7.6	7.6	7.7	7.7	7.8	7.7	7.8	7.7
19	8.6	8.5	8.5	8.5	7.7	7.6	7.7	7.7	7.8	7.8	7.7	7.7
20	8.6	8.5	8.5	8.4	7.7	7.6	7.7	7.7	7.8	7.8	7.8	7.7
21	8.7	8.5	8.5	8.4	7.7	7.6	7.7	7.7	7.8	7.8	7.9	7.8
22	8.8	8.6	8.5	8.4	7.7	7.7	7.7	7.7	7.8	7.8	8.0	7.9
23	8.7	8.4	8.4	8.4	7.7	7.7	7.7	7.7	7.8	7.8	8.0	8.0
24	8.9	8.1	8.4	8.3	7.8	7.7	7.7	7.7	7.8	7.8	8.0	7.9
25	8.8	8.4	8.4	8.1	7.8	7.7	7.7	7.7	7.8	7.8	8.0	8.0
26	8.7	8.5	8.5	8.4	7.8	7.8	7.7	7.7	7.8	7.7	8.0	7.9
27	8.7	8.5	8.5	8.4	7.8	7.8	7.7	7.7	7.8	7.7	8.0	7.9
28	8.6	8.5	8.5	8.4	7.8	7.6	7.7	7.7	7.8	7.8	7.9	7.9
29	8.5	8.3	8.5	8.4	7.8	7.8	7.7	7.6	---	---	7.9	7.8
30	8.5	8.3	8.4	8.4	7.8	7.8	7.7	7.6	---	---	7.9	7.8
31	8.7	8.5	---	---	7.8	7.8	7.7	7.6	---	---	7.8	7.8
MONTH	8.9	7.6	8.8	8.0	8.4	7.6	8.0	7.6	8.0	7.6	8.0	7.7

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.8	7.8	8.4	8.1	8.1	7.9	8.1	7.9	8.9	8.7	---	---
2	7.9	7.8	8.3	8.2	8.2	8.0	8.0	7.9	8.7	8.6	---	---
3	7.9	7.8	8.8	8.2	8.3	8.1	7.9	7.7	9.0	8.5	9.2	8.7
4	7.9	7.8	8.8	8.4	8.5	8.1	7.8	7.7	9.1	8.4	9.2	8.9
5	7.8	7.8	8.7	8.6	8.7	8.2	7.8	7.7	9.0	8.7	9.2	8.8
6	7.8	7.8	8.7	8.5	8.8	8.4	7.8	7.7	9.1	8.8	9.0	8.7
7	7.8	7.7	8.8	8.4	8.6	8.4	7.8	7.7	8.9	8.2	8.9	8.6
8	7.8	7.7	8.7	8.3	8.5	8.3	7.8	7.8	8.8	7.9	8.8	8.4
9	7.8	7.8	8.4	8.3	8.5	8.2	7.8	7.8	9.1	8.7	8.7	8.1
10	7.8	7.8	---	---	8.4	8.2	7.9	7.8	8.9	8.4	8.6	8.0
11	7.8	7.7	---	---	8.8	8.2	8.0	7.9	---	---	8.2	7.7
12	7.8	7.7	---	---	8.7	8.4	8.0	8.0	---	---	7.9	7.7
13	7.8	7.8	---	---	9.0	8.7	8.1	8.0	---	---	7.9	7.6
14	7.8	7.8	---	---	8.9	8.5	8.1	7.9	---	---	8.0	7.7
15	7.9	7.8	---	---	8.8	8.3	8.3	8.0	---	---	8.0	7.6
16	7.9	7.9	7.9	7.9	8.8	8.6	8.6	8.2	---	---	8.8	8.0
17	7.9	7.9	7.9	7.8	8.7	8.6	9.0	8.5	---	---	8.7	8.2
18	8.0	7.9	7.9	7.8	8.8	8.5	8.8	8.3	---	---	8.7	8.2
19	8.0	7.9	7.9	7.9	8.8	8.3	8.7	8.3	---	---	9.0	8.5
20	7.9	7.8	8.0	7.9	8.6	8.2	8.5	8.0	---	---	9.0	8.7
21	7.8	7.8	7.9	7.9	8.7	8.0	8.1	7.8	8.9	8.6	8.9	8.7
22	7.8	7.8	7.9	7.8	8.7	8.1	7.9	7.7	8.7	8.4	8.7	8.4
23	7.8	7.8	7.8	7.7	8.7	8.2	7.8	7.7	8.8	8.5	8.6	8.4
24	7.8	7.8	7.8	7.7	8.7	8.2	8.5	7.7	8.7	8.5	8.8	8.5
25	7.9	7.8	7.8	7.8	8.6	8.2	8.8	8.3	8.5	8.2	9.0	8.7
26	7.9	7.9	7.9	7.8	8.2	7.9	8.8	8.4	8.8	8.4	8.9	8.8
27	8.0	7.9	7.9	7.8	8.3	7.8	8.8	8.5	8.6	8.3	9.0	8.8
28	8.1	7.9	8.2	7.8	8.8	7.9	8.8	8.6	8.7	8.3	8.9	8.8
29	8.0	7.9	8.3	8.0	8.7	8.3	8.8	8.5	9.1	8.6	8.8	8.7
30	8.2	8.0	8.3	8.1	8.4	8.1	8.8	8.4	9.0	8.6	8.9	8.7
31	---	---	8.3	8.1	---	---	8.9	8.5	9.0	8.6	---	---
MONTH	8.2	7.7	8.8	7.7	9.0	7.8	9.0	7.7	9.1	7.9	9.2	7.6
YEAR	9.2	7.6										

04184100 MAUMEE RIVER AT DEFIANCE, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	19.0	17.5	14.0	12.5	2.0	.5	.0	.0	.0	.0	.5	.0
2	17.5	16.5	14.5	13.5	3.0	2.0	.0	.0	.0	.0	.5	.0
3	16.5	15.0	15.0	14.0	3.0	2.5	.0	.0	.0	.0	.0	.0
4	16.0	14.5	15.0	14.5	2.5	2.0	.0	.0	1.0	.0	.5	.0
5	16.0	15.0	14.5	13.5	2.5	1.0	.0	.0	1.0	.0	.5	.0
6	16.0	14.5	15.0	13.5	1.0	.5	.0	.0	1.0	.0	.5	.0
7	15.0	13.0	15.0	15.0	.5	.0	.0	.0	1.0	.0	.5	.0
8	15.0	13.5	15.0	15.0	.5	.5	.0	.0	1.0	.0	.5	.0
9	14.5	13.0	15.0	14.5	.5	.0	.0	.0	1.0	.0	.5	.0
10	13.0	12.0	15.0	11.0	.5	.5	.0	.0	1.0	.5	.5	.0
11	13.0	12.0	11.0	7.5	.5	.5	---	---	1.0	.5	.5	.0
12	12.0	11.0	7.0	6.0	.5	.0	.0	.0	1.0	.5	.5	.0
13	11.0	10.0	6.0	5.0	.5	.0	.0	.0	.5	.5	.0	.0
14	11.5	10.0	5.0	4.5	.5	.0	.0	.0	.5	.5	.0	.0
15	11.0	10.5	6.0	4.5	.0	.0	.0	.0	1.0	.5	.0	.0
16	---	---	7.0	6.0	.5	.0	.0	.0	.5	.5	.0	.0
17	10.0	8.5	7.5	7.0	2.0	.5	.0	.0	.5	.5	.0	.0
18	10.0	9.0	7.0	5.5	2.5	2.0	.0	.0	.5	.0	.0	.0
19	11.0	10.0	5.5	5.0	3.0	2.5	.0	.0	.5	.0	.5	.0
20	12.0	10.0	6.5	5.0	3.0	2.5	.0	.0	.5	.0	.0	.0
21	12.0	10.0	7.0	6.5	2.5	1.0	.0	.0	.5	.0	.5	.0
22	12.5	11.5	6.0	5.0	1.5	1.0	.0	.0	.5	.5	1.5	.5
23	12.0	11.0	5.0	5.0	1.0	.5	.0	.0	.5	.0	2.5	1.5
24	14.5	11.0	5.0	5.0	1.0	.5	.0	.0	.5	.0	2.0	1.5
25	13.5	12.0	5.0	3.5	1.0	.0	.0	.0	.5	.0	1.5	1.0
26	14.5	13.5	3.0	1.0	.5	.0	.0	.0	.5	.0	1.0	1.0
27	14.0	13.5	1.0	.0	.0	.0	.0	.0	.5	.0	1.5	1.0
28	14.0	13.0	.5	.5	.0	.0	.0	.0	.5	.0	2.5	1.5
29	13.0	12.5	.5	.5	.0	.0	.0	.0	---	---	4.0	2.0
30	12.5	11.5	.5	.5	.0	.0	.0	.0	---	---	4.5	3.5
31	12.5	11.5	---	---	.0	.0	.0	.0	---	---	7.0	4.5
MONTH	19.0	8.5	15.0	.0	3.0	.0	.0	.0	1.0	.0	7.0	.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.0	7.0	15.0	13.0	27.5	24.5	27.5	24.5	25.5	23.0	23.0	21.0
2	8.5	8.0	16.0	13.0	26.0	24.0	24.5	22.5	25.5	24.0	26.5	22.0
3	8.5	7.5	16.0	13.5	24.5	22.0	22.5	21.5	26.5	24.0	27.5	23.5
4	9.0	8.0	14.5	12.5	25.0	22.0	22.0	21.0	26.0	23.5	25.5	23.5
5	9.5	8.5	12.0	11.5	26.0	22.5	22.5	21.5	24.5	23.0	26.0	23.0
6	9.5	9.0	12.0	11.0	25.5	22.5	23.5	21.0	26.5	23.5	26.5	24.0
7	10.5	9.0	12.0	11.0	25.5	23.5	25.0	23.0	25.5	23.0	27.5	24.5
8	11.0	10.5	13.0	11.5	24.0	23.0	26.0	24.0	24.0	21.5	28.0	25.5
9	10.5	10.0	13.0	12.5	24.5	21.0	25.5	23.5	26.0	23.5	28.0	26.0
10	11.5	10.0	---	---	25.5	21.5	26.0	24.5	26.5	23.5	28.0	26.0
11	11.5	11.0	---	---	26.5	23.0	25.0	23.0	---	---	28.0	26.0
12	12.0	10.5	---	---	25.5	23.5	25.5	22.0	---	---	27.0	25.0
13	11.5	10.5	---	---	23.0	20.5	25.5	24.0	---	---	24.5	22.0
14	11.5	10.0	---	---	23.0	20.0	27.0	24.0	---	---	22.5	21.5
15	11.5	10.0	---	---	23.5	21.0	28.5	25.0	---	---	23.5	21.0
16	11.0	10.0	14.5	14.0	23.5	21.5	28.0	25.5	---	---	24.0	22.0
17	11.5	10.0	15.5	13.5	25.0	23.0	28.0	25.0	---	---	25.0	22.5
18	11.0	9.5	17.5	15.0	25.0	24.0	28.0	25.5	---	---	26.0	24.5
19	10.0	9.5	19.5	17.0	27.0	23.0	29.0	26.0	---	---	27.0	25.0
20	9.5	8.0	20.0	19.0	26.5	24.0	29.5	27.0	26.0	23.5	28.5	26.0
21	8.0	7.5	19.0	17.5	---	---	30.5	28.5	26.0	23.0	28.0	25.0
22	8.5	7.0	18.0	17.0	26.5	23.5	31.0	28.5	26.5	23.0	25.0	22.5
23	8.0	7.5	18.0	16.5	26.5	23.5	30.0	27.0	27.0	24.0	22.0	20.0
24	9.5	7.5	18.0	16.5	27.5	25.0	27.0	25.0	26.5	25.0	21.0	19.0
25	10.5	9.0	20.0	17.0	27.0	26.0	27.0	24.0	26.5	25.0	20.5	19.0
26	11.5	9.5	22.5	19.0	26.0	23.5	29.0	25.5	26.0	24.0	19.5	18.0
27	13.0	10.5	24.5	21.0	28.0	25.0	28.5	26.5	25.5	24.5	20.0	18.0
28	14.5	12.0	25.5	22.5	29.5	26.0	27.5	25.5	25.5	24.0	19.0	17.5
29	15.5	13.0	26.5	23.5	30.0	27.0	26.5	25.0	26.0	24.0	19.0	17.0
30	16.0	13.5	26.0	24.0	29.0	27.0	25.0	23.5	25.0	22.5	18.0	17.0
31	---	---	26.5	23.5	---	---	24.0	22.5	23.0	20.5	---	---
MONTH	16.0	7.0	26.5	11.0	30.0	20.0	31.0	21.0	27.0	20.5	28.5	17.0
YEAR	31.0	.0										

04184100 MAUMEE RIVER AT DEFIANCE, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.8	7.4	13.1	10.1	11.8	10.9	11.6	11.4	7.8	7.8	9.5	9.3
2	8.3	7.3	13.1	11.2	10.8	10.2	11.7	11.1	7.8	7.7	9.7	9.4
3	8.7	7.9	11.1	8.2	10.8	10.6	11.7	11.6	7.7	7.6	10.0	9.7
4	8.8	8.2	8.9	7.8	10.8	10.7	11.6	11.1	7.8	7.7	10.0	9.7
5	9.4	8.0	9.4	7.9	11.0	10.7	11.2	10.9	8.1	7.8	9.9	9.1
6	9.0	8.1	9.7	7.8	11.4	11.0	11.0	10.9	8.2	8.1	9.0	8.4
7	9.3	8.3	9.5	8.2	11.7	11.4	11.0	10.7	8.1	8.1	8.4	8.0
8	9.6	8.7	8.1	7.1	11.8	11.7	10.7	10.3	8.2	8.1	9.1	8.4
9	9.3	8.7	8.9	7.1	11.8	11.6	10.2	10.1	8.4	8.2	9.1	9.0
10	9.4	8.4	9.3	7.8	11.6	11.3	10.3	10.2	9.0	8.3	9.2	8.8
11	9.1	8.8	10.3	8.9	11.3	11.1	---	---	9.0	8.8	8.8	8.7
12	9.9	8.8	11.2	9.8	11.2	11.0	10.7	10.7	9.1	8.9	8.9	8.6
13	11.3	9.7	11.1	10.2	11.0	10.6	10.9	10.7	9.2	9.1	9.7	8.9
14	13.8	10.8	11.2	10.7	10.8	10.7	10.8	10.5	9.3	9.2	11.5	10.0
15	12.6	11.1	11.0	10.5	10.8	10.4	10.4	9.8	9.3	9.1	12.6	11.6
16	---	---	10.8	10.2	10.5	10.3	9.9	9.6	9.4	9.2	14.1	12.8
17	12.2	10.5	10.5	9.7	10.7	10.5	9.8	9.2	9.6	9.4	14.1	13.9
18	12.4	10.6	10.5	9.9	10.7	10.5	9.2	8.7	9.6	9.2	13.9	13.7
19	11.7	10.3	11.2	10.2	10.5	10.2	9.3	9.0	9.3	9.0	13.7	13.5
20	12.7	10.6	11.3	10.5	10.3	10.1	9.4	9.3	9.5	9.3	14.1	13.7
21	14.2	11.4	11.0	10.0	10.6	10.3	9.4	9.3	9.6	9.5	14.6	14.1
22	14.5	11.5	10.9	10.1	11.0	10.6	9.3	9.1	9.7	9.6	14.8	14.6
23	12.5	10.5	10.5	10.2	11.3	10.9	9.1	8.7	9.6	9.4	14.8	14.7
24	14.4	11.4	10.7	9.9	11.3	11.2	8.8	8.6	9.6	9.5	15.4	14.7
25	13.2	11.1	10.8	9.9	11.3	10.8	8.8	8.7	9.8	9.5	15.9	15.4
26	12.5	10.1	11.3	10.6	11.5	11.1	8.8	8.6	9.6	9.5	16.0	15.9
27	11.7	9.7	11.5	11.1	11.7	11.4	8.7	8.6	9.6	9.4	16.0	15.9
28	11.9	9.6	12.1	11.3	11.7	11.4	9.4	8.5	10.3	9.4	16.0	15.8
29	10.4	8.6	12.2	11.4	11.6	11.6	8.9	7.8	---	---	15.7	15.3
30	11.5	8.7	12.1	11.8	11.8	11.6	7.8	7.5	---	---	15.3	15.1
31	12.2	10.3	---	---	11.5	11.4	7.8	7.5	---	---	15.1	14.4
MONTH	14.5	7.3	13.1	7.1	11.8	10.1	11.7	7.5	10.3	7.6	16.0	8.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	14.3	13.7	13.6	10.9	9.1	6.4	6.0	5.1	13.4	8.9	12.4	7.0
2	---	---	12.8	11.7	9.2	7.0	5.7	4.9	10.6	8.7	---	---
3	---	---	18.0	11.7	10.8	7.1	5.7	4.9	11.1	4.7	---	---
4	---	---	15.7	11.8	12.8	7.5	6.1	5.5	13.2	4.2	12.0	8.2
5	---	---	13.7	11.6	17.7	8.5	6.3	6.0	12.0	8.3	10.4	6.3
6	12.5	10.9	17.1	11.3	17.6	10.7	6.3	6.0	11.5	7.1	10.3	6.1
7	12.5	7.5	16.6	12.0	16.6	8.8	6.2	6.0	10.6	5.5	9.0	5.6
8	11.8	7.9	12.3	10.5	11.4	7.4	6.1	6.0	9.5	4.4	---	---
9	8.9	8.0	11.3	10.1	11.6	7.0	6.1	6.0	12.3	7.6	---	---
10	---	---	---	---	10.2	7.3	6.2	5.9	11.9	6.0	---	---
11	9.8	9.2	---	---	16.6	7.4	6.9	6.0	---	---	---	---
12	9.4	9.1	---	---	14.2	8.5	7.1	6.2	---	---	---	---
13	9.6	9.3	---	---	18.2	9.6	7.3	6.5	---	---	---	---
14	9.9	9.6	---	---	20.0	11.8	7.8	6.1	---	---	---	---
15	10.1	9.8	---	---	19.1	12.6	9.3	6.4	---	---	---	---
16	10.0	9.8	8.8	8.7	15.3	9.8	11.8	7.2	---	---	10.6	5.3
17	10.5	9.8	9.0	8.5	13.9	9.8	19.9	8.7	---	---	9.1	6.2
18	10.3	10.1	8.9	8.6	14.6	8.8	18.2	12.6	---	---	10.9	6.3
19	10.2	10.0	9.2	8.5	17.7	9.2	17.5	10.9	---	---	12.5	7.8
20	10.3	9.6	9.0	8.4	---	---	18.1	12.1	---	---	12.5	8.0
21	10.5	10.1	8.5	8.1	---	---	16.9	10.3	---	---	11.4	7.6
22	10.8	10.2	8.3	7.1	18.6	13.1	9.7	6.1	---	---	---	---
23	11.4	10.7	7.4	6.8	15.3	9.9	8.9	5.4	12.7	8.2	---	---
24	11.6	11.0	7.5	7.4	13.4	8.1	9.2	6.6	12.4	8.4	---	---
25	11.2	10.9	7.9	7.5	11.3	6.2	14.9	6.7	12.3	8.6	---	---
26	12.0	10.8	8.3	7.2	7.0	3.5	15.7	9.4	13.3	7.2	---	---
27	11.0	10.5	8.2	7.5	8.4	4.1	15.7	8.8	12.3	9.3	---	---
28	10.7	9.9	10.6	7.5	12.7	4.4	16.5	9.4	10.0	6.3	---	---
29	11.2	9.9	12.2	8.4	13.7	8.5	15.1	10.1	11.8	7.5	---	---
30	13.0	10.2	11.1	8.3	8.9	5.4	13.8	11.0	11.7	8.4	12.5	9.6
31	---	---	10.3	7.9	---	---	12.6	9.7	13.4	6.4	---	---
MONTH	14.3	7.5	18.0	6.8	20.0	3.5	19.9	4.9	13.4	4.2	12.5	5.3
YEAR	20.0	3.5										

04184500 BEAN CREEK AT POWERS, OH

LOCATION.--Lat 41°40'39", long 84°13'56", in NE 1/4 sec. 24, T.9 S., R.1 E., Fulton County, Hydrologic Unit 04100006, on right bank at downstream side of bridge on U.S. Highway 20, 1 mi (2 km) east of Powers, 2.2 mi (3.5 km) upstream from Iron Creek, 3 mi (5 km) downstream from Silver Creek, and 5.2 mi (8.4 km) east of Fayette.

DRAINAGE AREA.--206 mi^2 (534 km^2).

PERIOD OF RECORD.--October 1940 to current year.

REVISED RECORDS.--WSP 1307: 1948 (M) WSP 1912: Drainage area WDR OH-76-2: 1975.

GAGE.--Water-stage recorder. Datum of gage is 717.57 (216.715 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 18, 1941, nonrecording gage, Jan. 18, 1941 to Sept. 30, 1977, water-stage recorder at same site at datum 5.00 ft (1.524 m) higher.

REMARKS.--Records good except those for Nov. 27 to Mar. 22, which are fair. Water-quality data collected at this site 1969 to 1977.

AVERAGE DISCHARGE.--38 years, 163 ft^3/s (4.616 m^3/s), 10.74 in/yr (273 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,250 ft^3/s (120 m^3/s) Apr. 29, 1956, gage height, 18.82 ft (5.736 m) present datum; minimum, 5.0 ft^3/s (0.14 m^3/s) Aug. 9, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 ft^3/s (34.0 m^3/s) and maximums (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 19	2300	1360	38,5	12,85	3,917	Apr. 7	1400	1670	47.3	12.72	3.877
Mar. 22	1200	2910	82.4	16,87	5,142	Apr. 11	1730	1220	34.6	11.12	3.389
Apr. 5	1100	1500	42.5	12.15	3.703	June 27	0930	*3240	91.8	*17.96	5.474

Minimum discharge: 13 ft^3/s (0.37 m^3/s) Sept. 8, 9, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	34	150	190	86	62	927	200	84	488	29	19
2	47	34	305	180	84	62	747	188	80	393	28	17
3	44	37	237	170	84	62	639	177	77	520	28	17
4	41	39	178	170	82	60	724	165	74	430	26	16
5	39	39	142	160	82	60	1370	160	69	334	25	16
6	36	39	120	160	80	60	1170	160	65	270	25	15
7	33	39	100	160	80	60	1540	160	69	222	33	15
8	34	40	92	150	78	60	1240	156	69	182	140	14
9	38	44	84	150	78	60	878	170	69	152	60	14
10	44	48	76	150	76	60	726	180	66	132	42	14
11	45	54	72	160	76	62	1070	170	63	113	35	14
12	42	54	70	180	74	64	937	160	60	95	30	19
13	40	50	72	170	74	80	652	227	59	86	28	26
14	38	47	82	160	72	520	526	451	59	81	25	32
15	36	46	450	150	72	840	449	510	58	74	24	31
16	36	46	660	140	72	1000	395	490	54	66	26	30
17	37	46	475	130	70	1190	356	432	54	59	25	26
18	40	54	484	130	70	1250	330	341	52	55	24	26
19	40	54	1110	120	70	1330	337	278	49	50	23	32
20	40	54	1180	120	68	1420	422	233	46	48	22	35
21	39	58	1070	110	68	1680	538	212	44	45	21	30
22	34	63	821	110	68	2790	486	190	49	45	20	26
23	34	63	575	100	66	2620	407	173	48	44	19	23
24	34	62	434	100	66	2200	358	165	45	42	19	22
25	34	62	340	100	66	1540	322	153	42	39	20	20
26	34	61	280	98	64	1240	288	140	1250	38	20	20
27	34	50	260	96	64	1380	261	128	3140	36	20	19
28	34	47	240	94	64	1390	242	118	2230	36	20	19
29	34	47	220	92	---	1410	227	107	1190	33	20	18
30	34	52	210	90	---	1150	214	98	713	31	20	18
31	34	---	200	88	---	976	---	92	---	29	19	---
TOTAL	1177	1463	10789	4178	2054	26738	18778	6584	10027	4268	916	643
MEAN	38.0	48.8	348	135	73.4	863	626	212	334	138	29.5	21.4
MAX	48	63	1180	190	86	2790	1540	510	3140	520	140	35
MIN	33	34	70	88	64	60	214	92	42	29	19	14
CFSM	.18	.24	1.69	.66	.36	4.19	3.04	1.03	1.62	.67	.14	.10
IN.	.21	.26	1.95	.75	.37	4.83	3.39	1.19	1.81	.77	.17	.12

CAL YR 1977 TOTAL 48985.1 MEAN 134 MAX 2200 MIN 9.2 CFSM .65 IN 8.85
WTR YR 1978 TOTAL 87615.0 MEAN 240 MAX 3140 MIN 14 CFSM 1.17 IN 15.82

04185000 TIFFIN RIVER AT STRYKER, OH

LOCATION.--Lat 41°30'16", long 84°25'47", in SW 1/4 sec. 5, T.6 N., R.4 E., Williams County, Hydrologic Unit 04100006, on left bank 0.5 mi (0.8 km) downstream from bridge on State Highway 191 at west edge of Stryker, 0.6 mi (1.0 km) upstream from Penn Central bridge, and 1.6 mi (2.6 km) downstream from Leatherwood Creek.

DRAINAGE AREA.--410 mi² (1,060 km²).

PERIOD OF RECORD.--September 1921 to September 1928 (published as "near Stryker"), October 1940 to current year.

REVISED RECORDS.--WSP 1144: 1922-28. WSP 1387: 1925. WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 685.1 ft (208.82 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1928, nonrecording gage at site 3.5 mi (5.6 km) downstream at different datum. Oct. 13, 1940, to Jan. 17, 1941, nonrecording gage and Jan. 18, 1941, to Sept. 30, 1953, water-stage recorder, at site 0.5 mi (0.8 km) downstream at same datum.

REMARKS.--Records fair except those for winter periods, which are poor. Small diversion about 12.5 mi (20.1 km) upstream from gage for municipal supply of Archbold. Diversion averaged 1.58 ft³/s (0.045 m³/s) in 1978 and is returned as sewage to Brush Creek which flows into Tiffin River about 15 mi (24 km) downstream from station. Water-quality data collected at this site 1965 to 1977. Sediment data collected 1969 to 1974.

AVERAGE DISCHARGE.--45 years, 312 ft³/s (8.836 m³/s).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,640 ft³/s (188 m³/s) Apr. 25, 1950, gage height, 15.45 ft (4.709 m); maximum gage height, 16.36 ft (4.987 m) Mar. 23, 1978; minimum daily discharge, 3.9 ft³/s (0.11 m³/s) Aug. 30, 31, Sept. 1, 1953.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 16.0 ft (4.88 m), from floodmarks, discharge, 7,600 ft³/s (215 m³/s). Flood in 1937 reached a stage of 15.0 ft (4.57 m), from information by local resident, discharge, 6,000 ft³/s (170 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,850 ft³/s (52.4 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 20	2100	2520	71.4	13.11	4.057	Apr. 7	1100	2400	68.0	13.15	4.008
Mar. 23	1000	*5900	167.1	*16.36	4.987	June 29	1800	3170	89.8	14.12	4.304

Minimum daily discharge, 15 ft³/s (0.42 m³/s) Sept. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	149	288	337	100	80	2120	252	124	2230	37	24
2	48	155	518	298	100	80	1920	232	115	1900	35	23
3	49	156	557	252	100	80	1780	216	111	1700	34	22
4	50	140	460	230	100	80	1670	203	105	1500	34	21
5	50	119	341	200	100	80	1720	198	100	1330	31	20
6	50	111	238	180	100	80	1850	198	94	1080	30	19
7	46	108	180	170	100	80	2350	194	93	715	32	18
8	50	110	170	150	100	80	2230	188	117	456	123	17
9	74	113	150	140	100	80	2060	201	118	315	246	17
10	88	116	140	130	100	80	1860	221	106	241	117	16
11	91	119	130	140	100	85	1730	216	96	194	67	15
12	84	122	140	140	100	110	1590	200	90	160	52	16
13	77	119	150	140	100	140	1540	230	92	135	45	20
14	71	106	250	130	95	250	1410	383	92	123	39	37
15	67	93	450	130	95	700	1140	514	89	112	33	44
16	65	90	950	130	95	900	830	625	84	100	29	39
17	64	95	1240	120	90	1300	588	690	81	86	35	37
18	70	97	1860	120	90	1400	464	694	78	76	34	39
19	81	97	2320	120	90	1800	433	586	75	70	32	35
20	82	99	2430	120	85	2400	510	433	71	65	31	39
21	82	107	2450	110	85	3550	723	332	68	62	29	47
22	81	113	2210	110	85	4740	803	284	65	71	25	37
23	80	117	1990	110	85	5680	805	249	66	81	22	29
24	76	117	1720	110	80	4990	731	231	66	66	21	23
25	77	113	1470	120	80	3940	599	212	62	59	20	20
26	84	112	1160	110	80	3030	484	198	164	54	20	18
27	97	96	1010	110	80	2870	390	179	694	50	20	17
28	112	84	835	110	80	2970	332	164	1400	47	21	16
29	127	90	634	110	---	2870	299	153	2880	45	21	19
30	140	102	502	110	---	2530	273	142	2840	40	22	19
31	146	---	407	110	---	2260	---	133	---	38	23	---
TOTAL	2407	3363	27340	4597	2595	49315	35244	8951	10236	13201	1360	763
MEAN	77.6	112	882	148	92.7	1591	1175	289	341	426	43.9	25.4
MAX	146	156	2450	337	100	5680	2350	694	2880	2230	246	47
MIN	46	84	130	110	80	80	273	133	62	38	20	15

CAL YR 1977 TOTAL 105376 MEAN 289 MAX 2700 MIN 15
WTR YR 1978 TOTAL 159422 MEAN 437 MAX 5680 MIN 15

04185300 TIFFIN RIVER AT EVANSPORT, OH

LOCATION.--Lat 41°25'38", long 84°23'22", in SE 1/4 sec. 33, T.6N., R.4E., Defiance County, Hydrologic Unit 04100006, on left bank at upstream side of bridge on State Highway 191, 0.4 mi (0.6 km) east of center of Evansport, 1,300 ft (396 m) downstream from Brush Creek, and 6.5 mi (10.5 km) downstream from Beaver Creek.

DRAINAGE AREA.--541 mi² (1,401 km²).

PERIOD OF RECORD.--Water years 1968 to September 1978 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1968 to September 1978 (discontinued).
pH: June 1968 to September 1978 (discontinued).
WATER TEMPERATURES: June 1968 to September 1978 (discontinued).
DISSOLVED OXYGEN: June 1968 to September 1978 (discontinued).

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. No discharge records available.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,120 micromhos Oct. 11, 1970; minimum, 170 micromhos Feb. 23, 1971.
pH: Maximum, 9.1 units Mar. 16-18, 1969; minimum, 6.4 units Jan. 30, 1974.
WATER TEMPERATURES: Maximum, 31.0°C Sept. 3, 4, 1973; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher Jan. 8-10, 1972; minimum, 1.2 mg/L Jan. 19, 20, 1977.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 894 micromhos Nov. 3; minimum, 240 micromhos Mar. 24.
pH: Maximum, 8.7 units Nov. 29, 30, Aug. 28, 29; minimum, 7.2 units June 26-28.
WATER TEMPERATURES: Maximum, 27.5°C July 21, 22; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 14.8 mg/L Mar. 26, 27; minimum, 3.8 mg/L Nov. 2.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	693	654	810	717	804	561	708	696	753	741	771	765
2	744	567	882	735	591	540	714	696	756	747	771	768
3	645	561	894	738	636	600	726	702	777	756	780	768
4	696	648	768	741	663	600	744	723	771	747	780	777
5	726	693	795	771	696	666	753	735	756	747	795	780
6	732	717	795	777	729	699	762	741	756	744	801	792
7	744	732	777	759	777	729	762	741	753	747	792	789
8	747	699	774	753	798	780	753	723	756	747	795	789
9	819	669	804	762	804	783	741	726	750	747	798	795
10	831	648	801	792	834	804	747	729	756	744	801	795
11	735	657	837	792	822	810	768	744	759	750	801	795
12	741	723	840	828	825	822	795	765	765	750	813	801
13	771	741	837	777	831	816	798	789	762	750	837	813
14	789	759	792	780	813	549	810	795	759	750	822	531
15	792	780	795	783	543	456	810	789	759	750	522	381
16	786	777	789	750	501	465	795	780	756	744	375	333
17	786	771	807	756	507	492	789	777	756	744	333	318
18	786	774	750	720	498	390	795	780	759	753	348	318
19	801	780	771	747	387	363	792	777	768	759	369	348
20	801	792	780	762	423	378	786	777	771	759	363	333
21	804	792	786	753	423	408	786	771	774	765	333	261
22	795	789	747	720	435	408	783	771	774	762	264	252
23	789	780	792	750	462	438	786	780	768	753	264	243
24	813	786	798	783	516	465	783	771	768	756	255	240
25	813	807	804	792	555	519	771	768	771	762	282	258
26	816	810	810	789	582	558	765	753	780	768	327	285
27	819	807	813	801	612	579	753	750	777	774	339	327
28	828	813	819	783	669	615	756	750	774	765	345	336
29	828	819	834	804	693	669	756	747	---	---	351	342
30	819	810	828	807	705	687	759	750	---	---	360	348
31	819	807	---	---	711	690	756	738	---	---	381	360
MONTH	831	561	894	717	834	363	810	696	780	741	837	240

04185300 TIFFIN RIVER AT EVANSPORT, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	408	384	633	624	702	641	394	348	753	717	780	777
2	417	408	639	630	696	647	435	384	732	699	783	774
3	435	417	642	633	714	690	516	435	753	711	801	780
4	456	435	642	636	714	705	579	522	801	708	795	783
5	465	447	642	636	714	705	579	567	771	735	783	774
6	459	420	657	636	729	696	612	579	765	759	777	768
7	420	375	660	648	708	681	633	609	759	720	---	---
8	408	375	657	651	705	633	651	633	720	705	---	---
9	411	408	651	642	720	675	666	645	738	651	---	---
10	435	408	657	642	729	693	678	663	639	435	---	---
11	465	435	657	636	729	705	690	672	522	483	---	---
12	486	462	642	633	717	705	714	684	579	525	---	---
13	483	456	645	624	723	711	714	705	606	579	---	---
14	477	453	651	582	729	717	732	711	639	606	---	---
15	510	480	600	537	747	720	729	714	666	639	---	---
16	534	510	543	531	732	711	732	723	690	666	---	---
17	552	534	576	546	729	720	741	723	711	690	---	---
18	561	549	597	573	729	720	753	729	729	708	---	---
19	585	564	630	597	735	726	741	735	741	729	---	---
20	582	543	636	624	738	729	750	738	759	726	---	---
21	537	501	651	636	738	729	750	705	756	732	---	---
22	525	504	660	651	744	723	741	705	741	732	---	---
23	552	528	657	654	747	735	753	714	741	720	---	---
24	576	552	672	657	750	741	771	738	744	720	---	---
25	594	579	693	669	753	708	750	720	759	744	---	---
26	618	597	699	675	723	351	744	732	759	756	---	---
27	624	606	702	678	615	474	741	729	756	738	---	---
28	633	615	699	675	594	444	750	735	738	720	---	---
29	636	618	696	681	438	333	759	741	741	729	---	---
30	636	624	696	687	348	321	762	744	756	738	---	---
31	---	---	699	684	---	---	759	726	780	756	---	---
MONTH	636	375	702	531	753	321	771	348	801	435	801	768
YEAR	894	240										

04185300 TIFFIN RIVER AT EVANSPORT, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.9	7.8	7.5	7.4	8.6	8.0	8.0	7.8	7.7	7.5	7.9	7.7
2	7.8	7.7	7.5	7.5	8.1	7.8	8.0	7.9	7.7	7.6	7.9	7.7
3	7.9	7.8	7.5	7.5	8.1	7.8	8.0	7.8	7.7	7.6	7.8	7.7
4	7.9	7.9	7.6	7.4	8.2	8.0	8.0	7.8	7.7	7.5	7.9	7.7
5	8.0	7.9	7.7	7.6	8.2	8.1	8.0	7.8	7.7	7.5	7.8	7.7
6	8.0	8.0	7.7	7.6	8.2	8.2	8.0	7.8	7.7	7.5	7.9	7.7
7	8.0	7.9	7.6	7.4	8.2	8.1	8.0	7.8	7.7	7.6	7.9	7.7
8	8.0	7.9	7.7	7.6	8.2	8.1	8.0	7.8	7.9	7.6	7.8	7.7
9	7.9	7.8	7.8	7.6	8.1	8.0	8.0	7.8	7.7	7.6	8.0	7.8
10	7.8	7.8	8.0	7.7	8.1	8.0	7.9	7.7	7.7	7.5	7.9	7.8
11	7.9	7.8	8.1	7.9	8.1	7.9	8.0	7.8	7.6	7.5	7.9	7.7
12	8.0	7.9	8.1	8.1	8.0	7.8	7.9	7.8	7.6	7.5	7.9	7.7
13	8.0	7.9	8.2	8.1	7.9	7.8	7.8	7.8	7.6	7.4	7.8	7.7
14	8.1	8.0	8.3	8.2	7.9	7.7	7.9	7.8	7.6	7.4	7.7	7.6
15	8.1	8.0	8.3	8.3	7.8	7.7	7.9	7.7	7.6	7.5	7.7	7.6
16	8.1	8.0	8.3	8.2	7.8	7.7	7.9	7.7	7.5	7.4	7.7	7.6
17	8.1	8.0	8.2	8.1	7.9	7.8	7.9	7.7	7.6	7.4	7.6	7.5
18	8.1	8.0	8.2	8.1	7.9	7.7	7.9	7.7	7.6	7.5	7.6	7.5
19	8.0	8.0	8.3	8.2	7.8	7.7	7.8	7.7	7.7	7.5	7.6	7.5
20	8.0	8.0	8.4	8.2	7.9	7.6	7.7	7.7	7.8	7.5	7.7	7.5
21	8.0	8.0	8.2	8.2	7.9	7.7	7.7	7.7	7.7	7.5	7.6	7.6
22	8.0	7.9	8.3	8.1	8.0	7.8	7.8	7.7	7.6	7.4	7.7	7.6
23	7.9	7.9	8.4	8.2	8.0	7.8	7.8	7.7	7.7	7.5	7.8	7.6
24	7.9	7.8	8.5	8.3	8.0	7.9	7.8	7.6	7.7	7.6	7.7	7.7
25	7.9	7.8	8.5	8.3	8.1	7.9	7.7	7.6	7.7	7.6	7.8	7.7
26	7.8	7.4	8.6	8.3	8.0	7.9	7.7	7.6	7.8	7.6	7.9	7.8
27	7.5	7.5	8.6	8.5	8.0	7.8	7.6	7.6	7.9	7.7	7.9	7.8
28	7.5	7.5	8.6	8.5	7.9	7.8	7.6	7.6	7.9	7.7	7.8	7.7
29	7.5	7.4	8.7	8.4	8.0	7.8	7.6	7.5	---	---	7.7	7.7
30	7.5	7.4	8.7	8.4	7.9	7.8	7.6	7.5	---	---	7.8	7.7
31	7.5	7.5	---	---	7.9	7.8	7.7	7.5	---	---	7.7	7.6
MONTH	8.1	7.4	8.7	7.4	8.6	7.6	8.0	7.5	7.9	7.4	8.0	7.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.6	7.5	8.0	7.9	7.7	7.7	7.6	7.5	8.3	8.2	8.6	8.4
2	7.7	7.6	8.1	8.0	7.7	7.7	7.6	7.6	8.3	8.2	8.5	8.4
3	7.8	7.7	8.1	8.0	7.8	7.7	7.7	7.6	8.4	8.2	8.4	8.3
4	7.7	7.7	8.1	8.0	7.8	7.7	7.7	7.7	8.5	8.2	8.4	8.2
5	7.7	7.6	8.1	8.0	7.8	7.7	7.8	7.7	8.5	8.3	8.4	8.2
6	7.6	7.6	8.1	8.0	7.8	7.8	7.9	7.8	8.6	8.3	8.4	8.2
7	7.6	7.5	8.1	8.0	7.7	7.7	7.8	7.8	8.5	8.3	8.4	8.3
8	7.6	7.5	8.0	8.0	7.7	7.7	7.8	7.8	8.5	8.2	8.4	8.2
9	7.6	7.6	8.0	7.9	7.7	7.7	7.8	7.8	8.4	8.1	8.3	8.2
10	7.7	7.6	8.1	8.0	7.7	7.6	7.9	7.8	8.1	7.7	8.3	8.2
11	7.7	7.7	8.0	7.9	7.6	7.6	7.9	7.9	7.9	7.8	8.3	8.2
12	7.7	7.7	8.0	7.9	7.7	7.6	8.0	7.9	7.9	7.8	8.3	8.2
13	7.8	7.7	7.9	7.8	7.8	7.7	8.0	8.0	7.9	7.9	8.2	8.2
14	7.9	7.8	7.8	7.8	7.8	7.8	8.0	8.0	8.0	7.9	8.2	8.0
15	7.9	7.8	7.8	7.7	7.8	7.7	8.0	8.0	8.0	7.9	8.2	8.1
16	7.9	7.9	7.8	7.7	7.8	7.7	8.0	8.0	8.2	7.9	8.1	8.1
17	7.9	7.9	7.9	7.8	7.8	7.7	8.1	8.0	8.2	8.0	8.1	8.0
18	7.9	7.9	7.9	7.8	7.8	7.7	8.1	8.0	8.3	8.1	8.0	7.9
19	7.9	7.9	7.9	7.8	7.8	7.7	8.1	8.0	8.3	8.1	7.9	7.8
20	7.9	7.9	7.8	7.8	7.7	7.7	8.2	8.0	8.4	8.2	7.9	7.8
21	7.9	7.8	7.8	7.8	7.8	7.7	8.1	8.0	8.5	8.2	8.0	7.9
22	7.9	7.8	7.8	7.8	7.8	7.6	8.0	7.9	8.5	8.3	8.1	8.0
23	7.9	7.8	7.9	7.8	7.8	7.8	7.9	7.9	8.5	8.2	8.2	8.1
24	7.9	7.9	7.8	7.8	7.8	7.8	8.1	7.9	8.4	8.2	8.2	8.2
25	7.9	7.9	7.8	7.8	7.8	7.5	8.1	8.0	8.4	8.3	8.2	8.2
26	8.0	7.9	7.8	7.8	7.7	7.2	8.1	8.0	8.6	8.3	8.3	8.2
27	7.9	7.8	7.8	7.7	7.4	7.2	8.1	8.0	8.6	8.4	8.3	8.3
28	7.9	7.8	7.8	7.7	7.3	7.2	8.2	8.1	8.7	8.3	8.4	8.3
29	7.9	7.8	7.7	7.7	7.5	7.2	8.2	8.2	8.7	8.5	8.4	8.3
30	7.9	7.9	7.7	7.7	7.5	7.5	8.3	8.2	8.7	8.5	8.4	8.4
31	---	---	7.7	7.7	---	---	8.3	8.2	8.6	8.5	---	---
MONTH	8.0	7.5	8.1	7.7	7.8	7.2	8.3	7.5	8.7	7.7	8.6	7.8
YEAR	8.7	7.2										

04185300 TIFFIN RIVER AT EVANSPORT, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	17.0	16.0	13.0	11.5	2.5	1.0	.5	.0	1.0	.5	1.0	.5
2	16.0	15.0	13.5	12.0	3.0	2.0	.5	.0	1.0	.5	1.0	.5
3	15.0	14.0	14.0	12.5	3.0	2.0	1.0	.0	1.0	.5	.5	.0
4	15.0	13.0	13.5	13.0	3.0	2.0	1.0	.0	1.0	.0	1.0	.5
5	14.5	13.0	13.0	12.5	2.0	1.0	1.0	.0	.5	.0	.5	.5
6	14.5	13.0	14.0	12.5	1.0	.5	.5	.0	1.0	.0	1.0	.5
7	12.5	11.0	14.0	13.5	1.5	1.0	.5	.0	.5	.5	1.0	.0
8	13.5	11.0	14.5	14.0	1.5	1.0	1.0	.0	1.0	.5	.5	.5
9	12.5	11.5	15.0	13.5	1.0	.5	.5	.0	.5	.5	1.0	.5
10	12.0	10.5	14.5	10.5	1.0	1.0	1.0	.0	.5	.0	1.0	.5
11	11.5	10.5	10.0	8.0	1.5	1.0	1.0	.5	.5	.0	.5	.0
12	10.5	9.5	8.0	7.0	1.0	.5	1.0	.5	.5	.0	.5	.0
13	10.5	8.5	7.0	6.0	1.0	.5	1.0	1.0	.5	.0	.5	.0
14	10.0	8.0	6.0	5.0	1.0	.5	1.5	.5	.5	.0	.0	.0
15	9.0	6.5	6.5	5.0	1.0	.5	1.5	.5	.5	.0	.5	.0
16	9.0	8.0	7.5	6.0	1.0	.5	1.0	1.0	.0	.0	.5	.0
17	8.0	6.5	8.0	7.0	1.5	.5	1.0	.5	.5	.0	.5	.0
18	8.5	7.0	7.5	6.0	2.5	1.5	1.0	1.0	.5	.0	.5	.0
19	9.5	8.0	6.5	5.5	2.5	2.0	1.0	.5	.5	.0	.5	.0
20	9.5	8.0	7.5	5.5	3.0	2.0	.5	.5	.5	.0	.5	.0
21	10.5	8.0	7.5	6.5	2.0	.5	.5	.5	.5	.0	.0	.0
22	11.0	9.5	7.0	5.5	1.0	.0	1.0	.5	.0	.0	1.0	.0
23	10.5	9.5	5.5	5.0	1.0	.0	1.0	.5	.5	.0	1.5	.5
24	11.0	9.0	5.5	5.0	1.0	.0	1.0	.5	.5	.0	1.5	1.0
25	12.0	10.5	5.5	4.0	1.0	.0	.5	.0	.5	.0	1.0	.5
26	13.0	11.5	4.0	2.5	.5	.5	.0	.0	.5	.0	.5	.5
27	12.5	11.5	2.5	1.0	.5	.0	.5	.0	1.0	.5	1.5	.5
28	12.5	11.0	2.0	1.0	.5	.0	.5	.0	1.0	.5	3.0	1.0
29	11.5	10.5	2.0	1.0	1.0	.0	.5	.0	---	---	4.0	2.5
30	11.5	10.0	1.5	1.0	1.0	.0	.5	.0	---	---	4.5	3.5
31	11.5	10.0	---	---	1.0	.0	.5	.5	---	---	7.0	4.5
MONTH	17.0	6.5	15.0	1.0	3.0	.0	1.5	.0	1.0	.0	7.0	.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.5	7.0	14.0	12.0	26.5	23.0	25.0	23.0	24.5	21.0	22.5	19.5
2	9.0	6.0	14.5	11.5	25.0	22.5	22.5	20.5	23.5	22.0	23.0	19.5
3	7.5	5.5	14.0	11.5	23.0	21.0	20.5	20.0	25.0	22.0	24.0	21.0
4	7.5	6.5	13.0	11.0	23.5	20.5	20.0	19.0	23.5	20.5	23.5	20.5
5	9.0	7.0	11.0	10.0	24.0	21.0	20.5	19.0	23.0	20.0	23.5	20.0
6	8.5	7.5	11.0	10.0	24.5	20.5	21.5	19.0	23.0	20.0	24.5	21.0
7	10.0	7.5	10.5	9.5	21.0	20.0	22.5	20.5	22.0	20.5	25.5	22.0
8	10.0	9.0	11.5	10.0	21.5	20.0	23.5	21.5	23.0	19.5	25.5	22.5
9	9.5	8.0	12.5	11.0	21.5	18.5	24.5	21.5	23.0	21.5	25.0	23.0
10	10.0	7.5	14.5	12.0	22.0	18.5	24.0	22.5	23.0	20.5	25.5	22.5
11	10.0	9.0	14.0	13.0	23.0	19.5	22.5	21.0	23.0	21.0	26.0	23.5
12	11.5	9.0	15.5	14.0	22.0	20.5	22.5	20.0	24.0	21.5	24.5	22.5
13	11.0	9.5	16.0	15.0	20.5	18.0	22.0	21.0	25.0	21.5	22.5	20.5
14	9.5	8.5	15.0	14.5	20.5	17.5	23.5	20.5	25.5	22.0	22.0	20.5
15	9.5	8.0	14.0	13.0	20.5	18.0	24.0	21.0	26.0	23.0	22.5	20.5
16	9.5	8.5	13.5	13.0	21.0	18.5	24.0	21.5	27.0	24.5	23.0	20.5
17	10.0	8.5	15.0	12.5	23.0	20.0	24.5	21.0	26.0	23.5	23.5	21.5
18	9.0	8.5	17.0	14.5	22.5	21.5	24.5	22.0	26.0	23.5	24.5	22.5
19	9.0	8.0	19.5	16.5	24.5	20.5	25.5	22.5	26.0	24.5	25.5	23.5
20	8.5	7.5	20.0	18.5	24.5	21.0	27.0	23.5	24.5	21.5	26.5	24.0
21	7.5	7.0	19.5	18.5	25.0	22.5	27.5	25.0	24.0	20.5	25.5	23.0
22	9.0	6.5	19.0	17.0	24.0	20.5	27.5	24.5	24.0	20.5	23.0	20.5
23	8.5	8.0	18.0	16.5	24.5	20.0	26.5	24.5	24.5	21.0	20.5	18.5
24	9.5	8.5	19.0	16.5	25.0	21.5	24.5	23.0	24.5	22.5	20.0	17.5
25	10.0	8.5	21.0	17.5	23.5	22.0	25.5	22.5	24.0	23.0	19.5	17.5
26	12.0	10.0	22.5	18.5	22.5	20.0	27.0	23.5	24.5	22.0	18.5	16.0
27	13.0	10.5	24.5	21.0	23.0	21.0	27.0	24.0	23.5	22.0	18.5	16.0
28	14.5	11.5	25.5	22.0	24.0	21.5	25.0	22.5	24.5	22.0	18.0	15.5
29	15.5	12.5	26.5	23.5	26.0	23.0	24.0	22.5	24.5	22.0	17.0	14.5
30	15.5	13.0	26.0	24.0	25.5	23.5	23.0	22.0	23.0	21.0	16.5	15.0
31	---	---	26.0	23.0	---	---	23.0	21.0	22.0	19.5	---	---
MONTH	15.5	5.5	26.5	9.5	26.5	17.5	27.5	19.0	27.0	19.5	26.5	14.5
YEAR	27.5	.0										

04185300 TIFFIN RIVER AT EVANSPORT, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.0	7.6	4.8	4.1	12.0	11.2	---	---	7.3	7.0	9.4	9.2
2	7.8	7.3	4.4	3.8	11.2	10.5	---	---	7.1	7.0	9.6	9.4
3	8.6	7.8	4.3	4.1	10.8	10.5	---	---	7.3	7.1	9.8	9.6
4	8.9	8.6	4.8	4.2	11.3	10.8	---	---	7.5	7.4	9.7	9.7
5	9.1	8.9	5.2	4.9	11.5	11.2	---	---	7.6	7.5	9.8	9.7
6	9.3	8.9	5.1	5.0	12.0	11.5	---	---	7.7	7.6	10.0	9.8
7	9.9	9.4	5.0	4.8	12.0	11.7	---	---	7.8	7.8	10.1	10.0
8	9.8	8.8	5.3	4.8	11.7	11.3	---	---	8.0	7.9	10.1	10.1
9	8.8	8.3	5.4	5.1	11.3	10.9	---	---	8.1	7.9	10.2	10.0
10	9.0	8.4	6.2	5.2	10.9	10.3	---	---	8.1	8.1	10.3	10.1
11	9.3	9.0	7.5	6.2	10.4	10.0	---	---	8.2	8.2	10.2	10.1
12	9.8	9.1	8.2	7.5	11.0	9.4	9.6	9.3	8.3	8.3	10.2	10.0
13	10.2	9.8	9.0	8.1	9.8	9.1	9.4	9.4	8.4	8.4	10.4	9.8
14	10.5	10.1	9.9	9.0	10.4	9.4	9.4	9.0	8.5	8.5	12.2	10.6
15	10.4	10.3	9.8	9.6	10.5	10.4	9.1	8.7	8.6	8.5	12.4	12.2
16	10.5	10.1	9.7	9.2	11.6	10.3	8.8	8.5	8.6	8.6	12.4	12.0
17	10.8	10.3	9.2	8.7	11.0	10.9	8.6	8.4	8.7	8.7	12.0	11.3
18	10.5	9.9	9.4	8.7	10.9	10.6	8.5	8.4	8.9	8.7	11.3	10.5
19	9.9	9.6	9.8	9.4	12.0	10.5	8.6	8.5	9.1	8.9	10.5	10.3
20	10.0	9.5	9.9	9.5	10.7	10.4	8.6	8.4	9.3	9.2	11.0	10.5
21	9.8	9.5	9.5	9.2	11.1	10.6	8.5	8.4	9.5	9.4	12.5	11.0
22	9.5	9.0	10.2	9.5	11.3	11.0	8.5	8.4	9.6	9.6	13.1	12.5
23	8.9	8.4	10.2	10.0	11.3	11.1	8.5	8.4	9.7	9.5	13.5	13.1
24	8.4	7.8	10.7	10.1	11.2	11.0	8.5	8.3	9.5	9.4	14.1	13.5
25	8.1	7.4	10.8	10.4	11.2	10.9	8.4	8.3	9.4	9.3	14.7	14.1
26	7.5	6.3	11.4	10.7	11.2	10.8	8.4	6.2	9.3	9.2	14.8	14.7
27	6.2	5.2	11.9	11.4	10.8	10.6	8.2	8.0	9.3	9.1	14.8	14.5
28	5.4	4.8	12.2	11.7	10.7	10.3	8.0	7.8	9.2	9.1	14.4	14.0
29	4.8	4.2	12.5	12.0	---	---	7.8	7.3	---	---	14.0	13.6
30	4.4	4.1	12.4	11.9	---	---	7.4	7.0	---	---	13.5	13.3
31	4.7	4.2	---	---	---	---	7.3	7.1	---	---	13.2	12.8
MONTH	10.8	4.1	12.5	3.8	12.0	9.1	9.6	7.0	9.7	7.0	14.8	9.2

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	12.8	12.0	10.9	9.7	6.2	5.8	5.5	5.1	8.9	6.8	9.5	7.0
2	12.3	11.8	11.4	9.9	6.0	5.7	5.6	5.2	8.4	6.5	8.6	6.7
3	12.7	11.8	11.5	10.2	6.4	5.9	5.8	5.5	9.5	6.4	8.3	6.2
4	12.7	12.5	10.7	10.1	6.6	6.1	6.1	5.8	10.0	6.7	7.2	5.8
5	12.4	11.9	10.1	9.7	6.6	6.1	6.4	6.0	10.7	6.9	7.9	5.7
6	12.1	11.9	10.8	9.8	6.8	6.2	6.5	6.4	12.1	7.3	7.6	5.9
7	11.9	11.4	11.0	10.3	6.7	6.1	6.5	6.2	10.0	7.1	7.6	5.6
8	11.4	11.1	10.5	10.1	6.2	5.9	6.2	6.0	11.2	6.4	8.4	5.5
9	11.6	11.1	10.5	9.7	6.5	5.8	6.2	6.0	8.8	7.3	7.3	5.7
10	11.9	11.6	10.7	9.6	6.4	6.0	6.5	6.0	7.2	5.8	7.5	5.8
11	11.8	11.6	10.0	9.3	6.2	5.6	6.9	6.3	6.7	6.2	7.3	5.6
12	11.7	9.4	9.4	8.9	6.1	5.8	7.3	6.7	6.8	6.1	6.8	5.3
13	9.5	9.3	8.9	8.5	6.8	5.9	7.2	6.9	7.3	6.2	6.4	5.2
14	10.1	9.5	8.3	7.9	7.1	6.3	7.4	6.9	7.9	6.3	6.7	5.8
15	10.3	10.0	8.7	8.1	7.2	6.7	7.5	6.9	8.1	6.2	6.8	5.9
16	10.5	10.2	9.0	8.7	7.4	6.6	7.2	6.7	8.4	5.9	6.7	5.8
17	10.6	10.2	9.0	8.7	7.2	6.5	7.5	6.6	7.8	5.7	6.2	5.6
18	10.4	10.1	8.7	8.6	6.6	6.2	7.6	6.6	8.5	5.8	5.9	5.2
19	10.2	10.0	8.6	8.3	6.8	5.9	7.9	6.6	7.9	5.8	5.3	5.0
20	10.2	10.0	8.3	7.7	6.6	5.9	9.0	6.5	8.7	6.0	5.2	4.7
21	10.4	10.2	7.6	7.5	6.8	5.7	8.1	6.4	9.6	6.2	5.5	4.7
22	10.7	10.4	8.0	7.5	6.9	5.9	7.3	6.2	8.0	5.3	6.3	5.5
23	10.7	10.5	8.0	7.8	7.2	6.1	6.4	5.7	9.3	4.3	7.0	6.1
24	10.6	10.4	8.0	7.7	7.1	6.0	6.8	6.0	9.6	4.9	7.2	6.9
25	10.7	10.4	7.8	7.5	6.8	5.8	7.3	6.0	9.0	6.4	7.4	6.9
26	10.5	10.2	7.7	7.4	6.8	5.4	7.2	6.0	10.4	6.3	7.9	7.2
27	10.3	10.0	7.3	7.0	5.8	5.5	7.6	6.0	9.6	7.0	8.3	7.6
28	9.9	9.6	7.0	6.7	5.7	5.5	7.7	6.3	10.3	6.1	8.3	7.6
29	10.3	9.5	6.7	6.4	5.5	5.1	7.1	6.4	10.9	6.9	8.8	8.0
30	10.5	9.5	6.4	6.2	5.3	5.2	7.7	6.3	9.6	7.0	8.8	8.1
31	---	---	6.3	6.0	---	---	8.7	6.6	9.8	6.6	---	---
MONTH	12.8	9.3	11.5	6.0	7.4	5.1	9.0	5.1	12.1	4.3	9.5	4.7
YEAR	14.8	3.8										

04186500 AUGLAIZE RIVER NEAR FORT JENNINGS, OH

LOCATION.--Lat 40°56'55", long 84°15'58", in SE 1/4 sec. 15, T.1 S., R.5 E., Putnam County, Hydrologic Unit 04100007, on left bank 200 ft (61 m) upstream from bridge on U. S. Highway 224, 3.5 mi (5.6 km) northeast of Fort Jennings, 6 mi (10 km) upstream from Ottawa River, and 7.3 mi (11.7 km) downstream from Jennings Creek.

DRAINAGE AREA.--332 mi² (860 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1921 to December 1935. October 1940 to current year.

REVISED RECORDS.--WSP 784: 1932. WSP 974: 1930(M). WSP 1307: 1922-24(M), 1926-27(M), 1929(M). WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 713.6 ft (217.51 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 6, 1930, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter period, which are fair. Beginning Jan. 4, 1971, water was diverted at a point 24.3 mi (39.1 km) upstream from station into Lake Bresler. Storage in Lake Bresler is available for low-flow augmentation and water supply of city of Lima, in Ottawa River basin. Net withdrawal totaled 846 mil gal (3.202 hm³), equivalent to a mean withdrawal of 3.59 ft³/s (0.10 m³/s). No releases have been made for low-flow augmentation. Some diversion from Grand Lake to Auglaize River basin through Miami and Erie Canal into Jennings Creek at a point 9.2 mi (14.8 km) upstream from station. Annual figures of runoff are considered to be within 10 percent of natural yield. Sediment data collected at this site 1970 to 1974.

AVERAGE DISCHARGE.--52 years, 283 ft³/s (8.015 m³/s), 11.57 in/yr (294 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 12,000 ft³/s (340 m³/s) Jan. 23, 1959; maximum gage height, 20.30 ft (6.187 m) Jan. 23, 1959, from floodmark (ice jam); minimum daily discharge, 4.9 ft³/s (0.14 m³/s) Oct. 7, 1956.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2000 ft³/s (57.5 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage Height (ft)	Gage Height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage Height (ft)	Gage Height (m)
Dec. 16	1630	6070	172	15.17	4.624	Mar. 28	0730	3630	103	12.35	3.764
Mar. 17	1630	*8210	233	*17.19	5.240	Apr. 7	1530	3900	84.7	12.70	3.871
Mar. 22	1030	5340	151	14.40	4.389	Apr. 21	1830	2990	110	11.47	3.496

Minimum Daily Discharge, 9.3 ft³/s (0.26 m³/s) Sept. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	40	89	110	280	42	758	166	100	32	20	33
2	44	43	198	96	240	44	623	146	89	68	20	29
3	48	40	294	84	200	46	611	130	82	235	20	23
4	41	39	212	78	180	42	723	121	78	147	21	23
5	39	40	156	74	160	39	703	123	72	94	21	21
6	37	38	120	70	140	38	1200	123	66	112	20	17
7	28	40	110	70	120	37	3570	110	67	98	27	15
8	34	44	110	110	110	36	2610	101	70	59	38	14
9	54	44	100	200	100	36	878	116	68	47	27	13
10	56	51	100	280	94	38	506	125	67	41	37	12
11	82	52	96	150	88	50	405	125	60	32	39	11
12	83	48	92	170	82	120	412	105	57	30	30	11
13	49	51	92	160	76	280	333	132	74	31	25	14
14	47	49	696	140	70	800	233	253	147	29	22	28
15	60	48	2920	120	66	2500	175	369	178	29	20	27
16	59	50	5520	100	62	6350	143	313	118	30	19	27
17	51	55	5290	85	58	7940	123	232	88	28	19	22
18	47	49	4370	70	54	6600	125	217	68	26	18	22
19	45	47	4750	60	52	5250	318	174	56	26	17	24
20	44	48	3120	56	50	3980	1500	153	49	24	18	20
21	43	49	1410	52	47	4510	2830	167	46	22	19	17
22	42	49	790	48	45	5230	2500	138	56	21	17	14
23	43	46	504	46	43	4590	1130	127	45	22	16	12
24	41	45	405	46	42	2760	680	180	40	24	16	11
25	40	46	628	50	41	1330	559	695	36	23	16	10
26	39	47	991	70	41	1560	426	427	39	22	15	9.5
27	38	45	500	150	41	3140	326	256	46	21	14	10
28	37	43	300	250	41	3550	258	187	40	21	19	9.8
29	37	40	210	380	---	2400	217	152	33	22	27	9.3
30	37	40	160	470	---	1290	190	131	32	21	30	9.7
31	37	---	140	350	---	837	---	116	---	20	28	---
TOTAL	1414	1366	34473	4195	2623	65465	25065	5910	2067	1457	695	518.3
MEAN	45.6	45.5	1112	135	93.7	2112	836	191	68.9	47.0	22.4	17.3
MAX	83	55	5520	470	280	7940	3570	695	178	235	39	33
MIN	28	38	89	46	41	36	123	101	32	20	14	9.3
CFSM	.14	.14	3.35	.41	.28	6.36	2.52	.58	.21	.14	.07	.05
IN.	.16	.15	3.86	.47	.29	7.34	2.81	.66	.23	.16	.08	.06

CAL YR 1977 TOTAL 83098.0 MEAN 228 MAX 5520 MIN 7.4 CFSM .69 IN 9.31
WTR YR 1978 TOTAL 145248.3 MEAN 398 MAX 7940 MIN 9.3 CFSM 1.20 IN 16.27

04186500 AUGLAIZE RIVER NEAR FORT JENNINGS, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1968 to 1978 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: February 1969 to September 1978 (discontinued).
pH: November 1968 to September 1978 (discontinued).
WATER TEMPERATURES: February 1969 to September 1978 (discontinued).
DISSOLVED OXYGEN: November 1968 to September 1978 (discontinued).

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Dissolved oxygen concentrations listed as 15.0 mg/L represent concentrations of 15.0 mg/L or higher due to instrument limitations prior to March 29, 1978; 20.0 mg/L limitation thereafter.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,690 micromhos Jan. 23, 1977; minimum, 150 micromhos Feb. 20, 1971.
pH: Maximum, 9.8 units July 22, 1970; minimum, 6.6 units Feb. 4, 1970.
WATER TEMPERATURES: Maximum, 33.0°C July 20, 1977; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 19.3 mg/L June 6, 1978; minimum, 1.6 mg/L July 10, 1974.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,200 micromhos Nov. 14, 15; minimum, 182 micromhos Mar. 16, 17.
pH: Maximum, 9.2 units July 11, 12; minimum, 7.2 units Dec. 16.
WATER TEMPERATURES: Maximum, 31.0°C July 22; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 19.3 mg/L June 6; minimum, 1.9 mg/L July 24.

REVISIONS.--The minimum pH value for April 13, 1972 has been revised to 7.4 units. The minimum pH value for July 18, Dec. 8, 9, July 15, 18, and Sept. 30, 1972 has been revised to 7.2 units. The minimum pH value for period of Daily Record has been revised to 6.6 units for water years 1972-1977, superseding value previously published.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	932	908	1100	1090	1150	1030	---	---	725	683	1040	1030
2	980	924	1110	1090	1070	1000	---	---	681	675	1020	1010
3	1030	911	1120	1110	1040	929	908	899	698	681	1020	1010
4	945	911	1140	1120	929	900	944	911	716	701	1030	1010
5	1000	948	1150	1140	912	845	945	929	740	717	1030	1010
6	1040	1000	1170	1150	851	828	939	930	762	738	1040	1020
7	1040	998	1170	1160	897	854	953	929	777	764	1060	1040
8	995	962	1170	1170	915	897	948	935	789	779	1060	1050
9	1010	971	1180	1150	944	905	945	924	798	789	1050	1040
10	1010	981	1150	1130	945	933	930	756	821	797	1060	1040
11	1020	977	1170	1140	980	947	750	714	843	821	1060	1040
12	971	950	1180	1160	998	984	716	668	861	843	1050	1010
13	986	957	1180	1160	999	954	707	675	879	863	1020	951
14	1010	987	1200	1180	933	612	759	710	887	879	942	465
15	1000	872	1200	1180	584	390	798	762	896	885	443	225
16	867	855	1190	1180	384	356	846	801	902	891	221	182
17	890	866	1190	1170	440	360	873	848	902	888	194	182
18	905	888	1170	1130	440	377	873	870	900	885	234	195
19	909	903	1140	1130	392	357	891	873	911	900	287	236
20	941	911	1130	1120	488	396	902	893	924	908	311	290
21	972	944	1120	1110	561	491	899	890	930	924	303	248
22	981	974	1150	1120	618	564	905	891	941	929	251	233
23	995	983	1160	1150	675	620	929	906	942	938	305	252
24	1020	996	1150	1130	714	678	947	929	960	941	374	309
25	1040	1020	1140	1130	696	677	951	945	999	981	456	377
26	1050	1020	1170	1140	681	626	956	945	987	980	464	396
27	1080	1050	1190	1160	---	---	966	956	1020	983	387	335
28	1100	1090	1170	1150	---	---	977	947	1030	1020	347	326
29	1110	1090	1190	1160	---	---	942	897	---	---	398	350
30	1110	1100	1180	1160	---	---	894	854	---	---	441	401
31	1110	1100	---	---	---	---	854	728	---	---	483	446
MONTH	1110	855	1200	1090	1150	356	977	668	1030	675	1060	182

04186500 AUGLAIZE RIVER NEAR FORT JENNINGS, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	485	468	666	650	716	699	804	782	944	929	1010	923
2	488	470	669	654	726	711	819	683	968	939	966	921
3	501	486	675	657	741	717	722	633	981	954	966	935
4	525	501	689	678	744	726	740	635	977	957	933	891
5	534	527	695	684	755	737	744	722	1000	978	893	887
6	537	326	708	698	774	749	755	719	1040	1000	903	893
7	320	285	719	710	791	774	798	740	1050	969	930	905
8	413	323	725	714	825	788	833	791	972	912	971	933
9	513	419	734	714	836	821	825	789	1010	914	1010	974
10	570	516	737	698	833	818	797	747	1040	872	1030	1010
11	602	572	737	711	849	833	753	707	936	863	1050	1030
12	615	603	737	726	860	846	725	707	951	821	1070	1040
13	635	605	729	711	857	833	756	728	822	806	1090	1040
14	662	636	740	657	879	791	755	747	848	824	1050	1020
15	671	663	681	645	828	698	788	761	887	851	1090	1020
16	695	671	648	590	795	759	803	782	930	890	1110	942
17	701	678	599	582	789	734	818	794	968	933	933	845
18	716	693	633	600	756	740	840	800	1010	969	876	849
19	690	648	644	630	738	680	855	831	1050	1010	873	816
20	657	359	659	627	678	672	842	825	1080	1050	846	816
21	366	359	668	623	695	672	849	833	1090	1080	861	848
22	407	366	683	659	711	696	882	852	1110	1100	855	843
23	489	411	699	686	710	702	909	884	1110	1100	852	846
24	545	494	725	701	737	710	930	911	1100	1080	887	852
25	576	546	714	477	758	738	954	930	1080	1070	947	888
26	597	579	557	471	783	762	972	957	1080	1070	981	948
27	615	597	579	557	791	777	980	969	---	---	1010	983
28	641	617	617	581	849	791	968	945	---	---	1040	1010
29	651	639	650	618	852	797	953	941	---	---	1060	1040
30	665	642	674	653	806	774	957	945	1090	1040	1060	1050
31	---	---	699	674	---	---	957	926	1100	1010	---	---
MONTH	716	285	740	471	879	672	980	633	1110	806	1110	816
YEAR	1200	182										

04186500 AUGLAIZE RIVER NEAR FORT JENNINGS, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.3	8.0	8.1	8.0	8.3	7.5	---	---	7.7	7.5	7.9	7.9
2	8.3	7.9	8.2	8.0	8.2	7.9	---	---	7.6	7.3	7.7	7.6
3	8.2	7.9	8.1	7.9	8.1	8.1	8.3	7.7	7.7	7.4	7.8	7.7
4	8.3	8.0	8.0	7.8	8.2	8.0	8.4	7.5	7.7	7.4	7.8	7.7
5	8.2	7.9	7.9	7.7	8.2	8.1	8.0	7.7	7.6	7.4	7.8	7.7
6	8.2	7.9	7.9	7.8	8.2	8.1	8.3	8.0	7.7	7.6	7.8	7.7
7	8.3	7.9	7.9	7.8	8.3	8.2	8.3	8.1	7.7	7.6	7.8	7.7
8	8.2	8.0	7.8	7.7	8.2	8.1	8.5	7.9	7.6	7.6	7.7	7.7
9	8.0	7.7	7.8	7.7	8.2	8.1	8.6	8.5	7.7	7.6	7.8	7.7
10	7.8	7.5	7.9	7.6	8.1	8.0	8.6	8.5	7.7	7.6	7.8	7.7
11	7.6	7.6	8.0	7.9	8.0	7.9	8.5	8.2	7.7	7.6	7.8	7.7
12	7.7	7.6	8.2	7.9	7.9	7.3	8.3	7.9	7.7	7.6	7.8	7.8
13	7.9	7.7	8.2	8.0	7.5	7.4	8.0	7.9	7.8	7.7	7.8	7.7
14	8.0	7.8	8.0	7.9	7.7	7.4	7.9	7.9	7.8	7.7	7.8	7.6
15	8.0	7.9	8.1	8.0	7.5	7.4	7.9	7.7	7.8	7.7	7.6	7.6
16	8.0	7.9	8.1	8.1	7.6	7.2	8.0	7.9	7.8	7.8	7.6	7.6
17	8.0	7.9	8.1	8.0	7.7	7.4	8.0	7.9	7.8	7.6	7.6	7.6
18	8.0	7.9	8.2	8.1	8.2	7.6	8.0	7.9	7.8	7.7	7.7	7.6
19	8.0	7.9	8.3	8.0	8.2	8.1	8.0	7.9	7.8	7.7	7.7	7.7
20	7.9	7.8	8.4	8.2	8.2	8.1	7.9	7.9	7.8	7.7	7.7	7.7
21	7.9	7.8	8.5	8.3	8.3	8.2	8.0	7.8	7.8	7.6	7.7	7.6
22	7.9	7.8	8.3	8.2	8.4	8.3	7.9	7.6	7.8	7.6	7.7	7.6
23	7.8	7.6	8.3	8.2	8.5	8.4	7.9	7.8	7.8	7.7	7.6	7.6
24	7.6	7.5	8.3	8.1	8.5	8.4	7.9	7.9	7.5	7.4	7.8	7.6
25	7.7	7.6	8.3	8.2	8.6	8.4	7.9	7.9	7.9	7.9	7.9	7.8
26	7.8	7.7	8.3	8.1	8.5	7.8	7.9	7.9	7.9	7.9	7.9	7.8
27	7.8	7.4	8.2	8.1	---	---	7.9	7.9	8.0	7.9	7.8	7.7
28	7.7	7.5	8.3	8.1	---	---	7.9	7.8	8.0	7.8	7.8	7.7
29	7.8	7.6	8.4	8.2	---	---	7.8	7.8	---	---	7.7	7.7
30	7.9	7.7	8.3	8.2	---	---	7.8	7.6	---	---	7.8	7.7
31	8.2	7.8	---	---	---	---	7.8	7.5	---	---	7.8	7.8
MONTH	8.3	7.4	8.5	7.6	8.6	7.2	8.6	7.5	8.0	7.3	7.9	7.6

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.8	7.8	8.7	8.4	8.3	7.9	8.9	8.6	9.0	8.5	7.9	7.8
2	7.9	7.8	8.8	8.6	8.4	8.0	8.6	7.9	9.0	8.7	7.9	7.7
3	7.9	7.8	8.8	8.7	8.5	8.1	7.8	7.7	8.8	8.4	8.0	7.8
4	7.8	7.8	8.7	8.6	8.6	8.3	8.2	7.7	8.6	8.4	8.1	7.8
5	7.9	7.8	8.6	8.5	8.6	8.5	9.0	8.1	8.5	8.3	8.1	7.8
6	7.9	7.6	8.6	8.4	8.6	8.4	9.1	8.8	8.5	8.3	8.1	7.8
7	7.5	7.5	8.6	8.4	8.5	8.2	9.1	8.9	8.4	8.2	8.2	7.9
8	7.7	7.5	8.6	8.5	8.2	7.9	9.1	8.9	8.3	8.0	8.2	7.9
9	7.9	7.7	8.5	8.4	7.9	7.8	9.1	8.7	8.4	7.9	8.3	8.0
10	7.9	7.8	8.7	8.3	7.8	7.7	9.1	8.7	8.3	8.0	8.3	8.0
11	7.9	7.8	8.7	8.4	7.9	7.8	9.2	8.9	8.0	7.7	8.4	8.1
12	8.0	7.9	8.6	8.4	7.9	7.8	9.2	8.8	7.9	7.6	8.3	8.1
13	8.0	7.9	8.5	8.3	8.0	7.8	8.9	8.8	8.0	7.7	8.1	7.9
14	8.1	8.0	8.2	7.9	8.0	7.8	8.8	8.6	8.0	7.7	7.9	7.7
15	8.1	8.0	8.0	7.9	8.0	7.7	8.8	8.6	8.1	7.7	7.8	7.7
16	8.1	8.0	8.0	7.8	8.0	7.8	8.7	8.5	8.2	7.8	7.8	7.6
17	8.3	8.1	8.1	7.9	8.0	7.8	8.8	8.5	8.3	7.9	7.7	7.6
18	8.3	8.2	8.3	8.0	8.1	7.8	8.7	8.5	8.3	8.0	7.7	7.5
19	8.2	8.1	8.5	8.1	8.0	7.8	8.7	8.5	8.2	8.1	7.8	7.6
20	8.1	7.5	8.4	8.2	8.1	7.8	8.6	8.4	8.2	8.0	7.8	7.6
21	7.6	7.5	8.3	7.9	8.2	7.8	8.6	8.4	8.1	7.9	7.9	7.6
22	7.7	7.6	8.3	8.0	8.2	7.8	8.6	8.4	8.0	7.8	8.1	7.7
23	7.8	7.7	8.3	8.1	8.2	7.9	8.4	8.2	7.9	7.8	8.2	7.8
24	7.9	7.8	8.1	8.0	8.3	8.0	8.2	8.0	8.0	7.8	8.3	7.9
25	8.0	7.9	8.0	7.6	8.4	8.0	8.1	8.0	8.0	7.8	8.3	8.0
26	8.1	7.9	7.7	7.5	8.3	8.0	8.0	7.9	8.2	7.9	8.4	8.0
27	8.1	8.0	7.7	7.6	8.5	7.9	8.1	7.9	---	---	8.3	8.1
28	8.2	8.1	7.8	7.6	8.7	8.1	8.3	8.0	---	---	8.2	8.1
29	8.5	8.1	7.9	7.7	8.8	8.5	8.4	8.1	---	---	8.2	8.0
30	8.6	8.2	7.9	7.8	9.1	8.6	8.5	8.2	8.2	7.9	8.2	8.1
31	---	---	8.0	7.8	---	---	8.7	8.3	8.0	7.8	---	---
MONTH	8.6	7.5	8.8	7.5	9.1	7.7	9.2	7.7	9.0	7.6	8.4	7.5
YEAR	9.2	7.2										

04186500 AUGLAIZE RIVER NEAR FORT JENNINGS, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	19.0	17.0	14.5	12.0	3.5	1.0	---	---	.0	.0	.5	.0
2	17.0	15.5	15.0	12.5	3.0	2.5	---	---	.0	.0	.5	.0
3	16.0	13.5	15.5	14.0	3.0	2.0	.5	.5	.0	.0	.5	.0
4	15.5	12.5	15.5	14.0	2.0	1.0	.5	.5	.0	.0	.5	.0
5	16.0	13.5	14.0	13.0	1.0	.0	.5	.5	.0	.0	.5	.0
6	15.5	14.0	15.5	13.5	.0	.0	.5	.5	.0	.0	.5	.0
7	14.5	12.5	15.5	14.5	.0	.0	.5	.5	.0	.0	.0	.0
8	15.5	12.5	15.5	14.5	.0	.0	.5	.5	.0	.0	.0	.0
9	14.0	11.5	15.5	14.5	.0	.0	.5	.0	.0	.0	.5	.0
10	13.0	10.5	15.5	9.0	.0	.0	.5	.0	.0	.0	.5	.0
11	12.5	10.5	8.5	6.0	.0	.0	.5	.5	.0	.0	.5	.0
12	10.5	9.5	6.0	4.5	.5	.0	.5	.0	.0	.0	.5	.0
13	10.5	8.5	4.5	3.0	.5	.5	.0	.0	.0	.0	.5	.0
14	11.0	8.0	4.5	3.0	.5	.5	.0	.0	.0	.0	.5	.0
15	10.0	9.0	6.0	4.0	.5	.5	.0	.0	.0	.0	.5	.0
16	9.5	8.5	8.0	6.0	1.0	.5	.0	.0	.0	.0	.5	.0
17	9.5	6.5	8.0	6.5	4.5	1.0	.0	.0	.0	.0	.5	.0
18	9.5	8.0	6.5	5.0	5.0	4.5	.0	.0	.0	.0	.5	.0
19	10.5	8.5	5.0	4.0	5.0	5.0	.0	.0	.0	.0	.5	.0
20	11.0	8.5	8.0	5.0	5.0	3.5	.0	.0	.0	.0	.5	.0
21	12.0	8.5	8.5	6.5	3.5	2.0	.0	.0	.0	.0	2.0	.5
22	13.0	10.5	6.0	5.0	2.0	1.0	.0	.0	.0	.0	4.0	1.5
23	12.0	10.5	5.5	5.0	1.5	.5	.0	.0	.0	.0	5.0	4.0
24	12.5	9.5	5.5	4.5	2.5	1.5	.0	.0	.5	.0	4.5	2.5
25	13.5	11.5	4.5	3.0	2.5	.5	.0	.0	.5	.0	2.0	1.5
26	14.0	12.5	3.0	.5	.5	.0	.0	.0	.5	.0	2.0	1.5
27	13.5	12.0	.5	.0	.5	.0	.0	.0	.5	.0	2.5	1.5
28	14.0	11.5	1.0	.0	1.0	.5	.0	.0	.5	.0	5.0	2.0
29	13.0	11.0	1.0	.0	.5	.0	.0	.0	---	---	6.5	4.5
30	13.0	11.0	1.0	.5	.5	.0	.0	.0	---	---	6.0	5.0
31	12.5	10.5	---	---	---	---	.0	.0	---	---	9.0	5.5
MONTH	19.0	6.5	15.5	.0	5.0	.0	.5	.0	.5	.0	9.0	.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.5	9.0	15.0	12.5	27.0	23.5	27.0	24.0	25.5	21.5	23.0	19.5
2	11.0	6.5	16.0	12.5	25.5	23.5	23.5	21.0	24.5	23.0	24.0	20.0
3	8.5	6.0	16.5	13.0	24.5	21.0	21.0	20.0	26.5	23.5	24.5	21.5
4	10.0	8.5	15.0	11.5	23.5	21.0	22.0	19.5	25.0	21.5	24.0	21.0
5	11.0	8.5	11.5	10.5	25.0	20.5	22.5	20.5	24.0	21.0	24.5	20.5
6	11.0	9.0	11.5	10.0	24.5	20.5	25.0	21.0	25.5	22.0	25.0	21.5
7	12.0	8.5	12.0	10.5	23.0	22.0	27.5	23.5	24.0	21.5	26.0	22.5
8	12.0	10.0	13.5	11.5	24.0	21.5	28.5	24.5	24.5	20.5	26.5	23.0
9	10.0	8.0	14.5	12.5	24.5	20.5	27.0	24.0	26.0	22.0	27.0	23.5
10	12.5	8.5	16.0	12.5	25.0	21.0	26.5	24.5	26.0	22.5	27.0	24.0
11	13.0	12.0	16.0	14.0	25.5	21.5	25.0	21.0	25.5	22.5	26.5	24.0
12	13.0	10.5	16.0	15.0	24.0	22.0	25.0	20.5	25.5	23.0	25.5	23.5
13	13.0	10.5	17.0	15.0	21.5	18.5	25.5	22.5	27.0	23.0	23.5	21.5
14	12.0	9.5	15.5	14.0	21.0	18.0	27.5	23.5	27.5	24.0	23.0	22.0
15	13.0	9.5	14.0	13.5	21.0	19.0	28.0	23.5	28.0	25.0	23.0	20.5
16	13.0	10.0	14.0	13.0	22.0	19.5	26.5	23.0	28.0	25.5	23.5	21.5
17	14.0	10.0	17.0	13.0	23.5	21.0	27.0	22.0	27.0	24.0	25.0	22.0
18	12.0	10.0	20.0	16.0	25.0	22.0	26.5	23.0	27.0	24.0	26.0	24.0
19	10.5	9.5	22.5	18.0	26.5	22.0	28.5	24.0	26.0	24.0	26.5	24.0
20	10.5	8.0	22.5	20.5	26.5	22.5	30.0	25.5	24.5	21.0	27.5	25.0
21	8.0	7.0	21.0	17.5	27.0	24.0	30.5	27.0	24.5	20.5	26.5	23.5
22	8.5	6.0	18.0	16.0	25.5	21.5	31.0	27.5	25.0	21.0	23.0	20.0
23	8.5	6.0	17.5	16.5	26.0	21.5	29.0	25.5	26.5	22.0	20.5	18.0
24	11.0	8.0	18.5	17.0	26.0	22.5	25.5	23.5	27.0	23.5	20.0	17.0
25	11.0	10.0	19.0	16.5	25.5	23.0	26.5	23.0	26.0	24.5	19.5	17.5
26	12.0	9.5	21.0	18.5	25.5	22.5	29.0	24.5	25.5	22.5	18.5	16.0
27	14.0	11.0	24.5	20.5	28.5	24.0	27.5	25.0	---	---	19.0	16.0
28	16.0	12.5	25.0	22.0	29.5	25.5	26.5	23.0	---	---	18.0	16.0
29	17.5	13.5	25.5	23.5	30.0	25.5	25.0	23.0	---	---	17.0	14.5
30	16.5	14.0	26.0	24.0	28.5	25.5	24.0	22.0	24.0	20.5	17.0	15.0
31	---	---	26.5	23.0	---	---	24.0	20.5	22.0	19.0	---	---
MONTH	17.5	6.0	26.5	10.0	30.0	18.0	31.0	19.5	28.0	19.0	27.5	14.5
YEAR	31.0	.0										

04186500 AUGLAIZE RIVER NEAR FORT JENNINGS, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	9.1	6.6	10.2	6.9	11.9	10.4	---	---	7.8	7.4	10.7	10.3
2	9.7	6.1	10.4	6.8	11.1	9.7	---	---	7.8	7.5	10.0	9.6
3	9.0	6.7	9.6	6.3	11.0	10.7	12.3	11.8	7.7	7.5	10.2	9.9
4	10.8	7.7	7.8	5.6	11.6	10.8	11.8	11.5	7.7	7.5	9.9	9.8
5	10.7	7.6	8.0	5.7	11.8	11.2	11.5	11.1	7.7	7.4	10.1	9.7
6	11.1	7.5	7.9	5.8	12.0	11.4	11.1	10.8	7.9	7.7	10.2	10.1
7	12.8	7.9	6.8	5.3	11.9	11.4	11.1	10.6	8.1	7.7	10.2	10.1
8	12.0	8.4	5.7	4.7	11.5	11.0	10.8	10.6	8.0	7.7	10.0	9.6
9	9.6	7.5	6.0	4.7	11.1	10.7	11.4	10.7	8.0	7.5	10.0	9.7
10	10.4	7.5	7.5	5.4	10.7	10.5	11.2	8.3	7.7	7.5	10.1	9.8
11	8.9	8.2	9.9	7.5	10.6	10.2	11.0	8.7	7.7	7.3	9.9	9.3
12	9.8	8.8	10.4	9.4	10.7	10.0	11.9	10.0	7.5	7.3	9.8	9.3
13	10.1	9.1	10.9	9.9	10.7	9.9	11.2	10.5	7.8	7.4	10.1	9.5
14	9.8	9.2	11.3	10.4	10.5	9.4	10.4	10.1	7.9	7.5	12.1	10.2
15	9.7	8.9	11.2	10.5	10.5	9.6	10.3	9.9	7.6	7.4	13.3	12.2
16	9.7	9.0	10.5	9.5	11.0	10.5	10.3	10.1	7.7	7.4	13.6	13.3
17	10.0	9.4	10.0	9.0	10.9	10.3	10.1	9.6	7.7	7.4	13.7	13.5
18	9.8	9.3	10.7	9.4	10.7	9.9	9.7	9.4	7.6	7.4	13.7	13.4
19	9.5	9.0	11.1	9.7	10.1	9.8	9.5	9.3	7.6	7.5	13.5	13.1
20	9.4	8.8	11.5	10.1	10.1	9.9	9.5	8.7	7.8	7.4	13.1	12.9
21	9.0	8.3	11.8	9.8	10.6	10.0	9.8	8.8	7.5	7.3	13.1	12.9
22	9.2	8.1	12.1	10.3	11.4	10.6	9.3	8.9	7.5	7.3	13.5	13.1
23	9.1	8.1	11.2	10.4	11.8	11.4	9.2	8.1	7.4	7.1	13.1	12.6
24	9.6	7.9	12.3	10.0	11.6	11.3	9.2	8.9	8.8	8.6	13.7	12.6
25	8.9	7.4	11.9	10.6	11.7	8.0	8.9	8.6	10.8	10.6	14.2	13.7
26	8.0	6.8	13.1	11.0	12.0	11.0	8.7	7.9	10.7	10.5	14.0	13.7
27	7.8	6.2	12.8	11.9	12.3	11.4	7.8	7.0	10.8	9.9	13.7	13.6
28	8.6	5.9	13.3	11.6	11.9	11.3	7.0	6.3	10.9	10.4	13.7	13.2
29	8.4	6.2	13.6	12.2	11.9	11.0	7.9	7.1	---	---	13.4	12.6
30	9.4	6.5	13.0	12.1	11.2	10.9	7.9	7.8	---	---	13.1	11.0
31	10.0	6.8	---	---	---	---	7.8	7.6	---	---	11.1	10.4
MONTH	12.8	5.9	13.6	4.7	12.3	8.0	12.3	6.3	10.9	7.1	14.2	9.3

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.7	9.9	11.4	9.5	---	---	---	---	10.7	5.3		
2	10.7	9.8	12.4	10.7	---	---	---	---	9.1	7.1		
3	10.8	10.3	11.7	9.2	---	---	---	---	9.9	5.6		
4	10.2	9.7	11.0	9.4	---	---	---	---	8.2	5.1		
5	10.3	9.7	10.9	9.1	16.3	12.8	---	---	7.9	4.9		
6	9.9	9.5	10.5	9.1	19.3	14.1	---	---	7.8	4.9		
7	9.7	9.0	10.7	9.9	16.5	12.0	---	---	6.6	4.9		
8	9.4	9.0	10.9	9.9	13.6	9.6	---	---	7.8	3.9		
9	10.0	9.4	10.8	9.2	11.6	9.0	---	---	8.2	4.5		
10	10.0	9.4	11.7	9.0	11.5	8.2	---	---	7.7	4.5		
11	9.4	7.0	11.6	9.7	12.6	8.9	---	---	6.6	3.7		
12	9.9	9.4	11.1	8.9	11.4	9.6	17.0	14.4	6.3	2.5		
13	9.8	9.0	11.5	8.2	14.0	10.2	14.6	8.7	6.5	3.7		
14	10.2	9.6	9.6	7.8	14.9	10.0	10.7	5.4	7.6	3.4		
15	10.1	9.5	9.5	8.2	13.8	10.7	9.3	4.9	7.7	4.0		
16	10.8	9.4	---	---	15.0	10.8	8.3	3.6	7.4	4.1		
17	10.8	9.6	---	---	14.5	10.6	9.1	3.8	7.9	4.0		
18	11.2	9.8	---	---	14.8	10.4	9.1	3.9	7.7	4.0		
19	11.3	10.2	---	---	13.8	9.5	9.2	3.9	---	---		
20	10.3	9.4	---	---	14.0	9.2	8.9	3.6	---	---		
21	10.2	10.0	---	---	13.9	9.0	8.6	3.2	---	---		
22	10.4	10.0	---	---	13.6	9.1	8.1	2.6	---	---		
23	10.3	10.0	---	---	13.5	9.1	5.2	2.1	---	---		
24	10.8	10.0	---	---	13.2	9.0	4.0	1.9	---	---		
25	10.6	9.8	---	---	13.0	8.6	4.9	2.5	---	---		
26	10.4	9.6	---	---	11.0	7.8	5.4	2.6	---	---		
27	10.5	9.6	---	---	12.8	7.3	5.8	2.7	---	---		
28	10.9	9.4	---	---	13.4	7.5	6.9	3.5	---	---		
29	11.2	9.4	---	---	12.9	8.2	6.9	4.3	---	---		
30	10.5	9.2	---	---	10.7	6.7	6.1	3.2	---	---		
31	---	---	---	---	---	---	7.2	3.4	---	---		
MONTH	11.3	7.0	12.4	7.8	19.3	6.7	17.0	1.9	10.7	2.5		
YEAR	19.3	1.9										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04187500 OTTAWA RIVER AT ALLENTOWN, OH

LOCATION.--Lat 40°45'18", long 84°11'41", in NW 1/4 sec. 29, T.3S., R.6E., Allen County, Hydrologic Unit 04100007, on left bank at upstream side of bridge on State Highway 81 at Allentown, 0.3 mi (0.5 km) downstream from Kessler Run, and 1.5 mi (2.4 km) upstream from McBride Ditch.

DRAINAGE AREA.--160 mi² (414 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to December 1935, August 1943 to current year.

REVISED RECORDS.--WSP 1004: 1924. WSP 1144: 1944(M). WSP 1207: 1927. WSP 1387: 1924(M), 1927-28(M), 1929, 1930(M), 1935(M). WSP 1912: Drainage area. WDR OH-77-2: 1976 (P).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 789.14 ft (240.530 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1925, nonrecording gage and Oct. 1, 1925, to Dec. 30, 1935, water-stage recorder, at site 35 ft (11 m) downstream at same datum.

REMARKS.--Records good except those for winter periods and August 28 to Sept. 26, which are fair. Diurnal fluctuation and some regulation caused by operation of water-supply and sewage-treatment plants of city of Lima upstream from station.

AVERAGE DISCHARGE.--47 years, 125 ft³/s (3.540 m³/s), 10.61 in/yr (269 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,740 ft³/s (219 m³/s) Jan. 22, 1959, gage height, 10.88 ft (3.316 m), from rating curve extended above 4,800 ft³/s (136 m³/s); minimum daily, 2.4 ft³/s (0.068 m³/s) June 28, July 21, 1933.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 15, 1939, reached a stage of 10.1 ft (3.08 m), discharge, 6,160 ft³/s (174 m³/s), and flood in May 1943 reached a stage of about 10 ft (3 m), discharge, about 6,000 ft³/s (170 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,600 ft³/s (45.3 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 15	1530	*3520	99.7	*8.60	2.621	Mar. 27	0900	1820	51.5	6.67	2.033
Mar. 15	2030	2650	75.0	7.75	2.362	Apr. 7	0430	1850	52.4	6.73	2.051
Mar. 21	2300	2780	78.7	7.90	2.408						

Minimum Discharge, 18 ft³/s (0.51 m³/s) Aug. 27 but may have been less during period of construction Aug. 28 to Sept. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	117	36	125	55	70	46	283	76	59	33	27	29
2	75	35	178	52	63	47	233	67	54	32	27	28
3	63	35	133	48	57	46	241	63	49	62	41	28
4	45	34	102	45	53	43	346	63	44	155	31	28
5	41	35	84	45	50	42	370	60	41	253	30	28
6	47	37	60	45	48	41	609	59	41	105	27	28
7	41	44	57	55	47	40	1340	54	45	43	37	28
8	76	37	70	70	46	40	328	80	51	49	38	28
9	109	32	65	105	45	41	148	63	47	57	33	28
10	141	59	60	80	43	41	166	65	44	49	48	28
11	48	39	58	60	42	42	257	54	40	38	30	28
12	42	38	63	45	41	46	207	51	38	35	27	28
13	38	38	139	43	40	136	142	100	84	34	25	44
14	53	36	2030	42	39	1230	112	112	220	35	28	40
15	52	37	3330	41	38	2470	91	89	163	34	27	47
16	48	42	2000	40	38	1940	82	52	95	33	24	30
17	46	38	1130	38	38	1160	75	58	70	34	26	38
18	42	35	1380	37	38	714	148	105	57	36	28	33
19	41	33	899	37	38	624	768	216	52	35	29	32
20	40	34	497	36	38	854	1360	122	51	34	35	34
21	37	38	346	36	38	2130	1310	100	47	31	30	32
22	38	37	182	36	38	2360	559	82	44	25	28	31
23	34	35	133	35	39	1190	332	78	42	26	28	29
24	32	35	174	36	39	803	278	296	38	28	28	29
25	33	38	465	38	40	511	216	380	37	30	27	28
26	37	38	265	40	41	962	159	170	34	30	21	30
27	35	34	139	44	43	1600	125	120	42	29	24	31
28	35	35	85	50	45	1290	105	100	42	29	35	28
29	34	33	75	65	---	705	87	82	37	28	44	29
30	35	52	68	80	---	456	92	71	35	28	41	25
31	35	---	62	75	---	305	---	65	---	25	50	---
TOTAL	1590	1129	14454	1554	1235	21955	10559	3153	1743	1495	974	927
MEAN	51.3	37.6	466	50.1	44.1	708	352	102	58.1	48.2	31.4	30.9
MAX	141	59	3330	105	70	2470	1360	380	220	253	50	47
MIN	32	32	57	35	38	40	75	51	34	25	21	25
CFSM	.32	.24	2.91	.31	.28	4.43	2.20	.64	.36	.30	.20	.19
IN.	.37	.26	3.36	.36	.29	5.10	2.45	.73	.41	.35	.23	.22

CAL YR 1977 TOTAL 40269 MEAN 110 MAX 3330 MIN 17 CFSM .69 IN 9.36
WTR YR 1978 TOTAL 60768 MEAN 166 MAX 3330 MIN 21 CFSM 1.04 IN 14.13

04187500 OTTAWA RIVER AT ALLENTOWN, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: March 1969 to current year.
pH: October 1977 to current year.
WATER TEMPERATURES: March 1969 to current year.
DISSOLVED OXYGEN: October 1977 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Dissolved oxygen concentrations listed as 20.0 mg/L represent concentrations of 20.0 mg/L or higher, due to instrument limitations.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 2,810 micromhos Feb. 11, 1977; minimum recorded, 199 micromhos Mar. 18, 1973.
pH: Maximum, 9.4 units Feb. 26, 1978; minimum, 7.1 units Nov. 3, 8, 9, 21, 1977, Aug. 12, Sept. 29, 30, 1978.
WATER TEMPERATURES: Maximum recorded, 31.5°C June 29, 1970, July 15, 1976; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 20.0 mg/L or higher May 3, 1978; minimum, 0.5 mg/L June 12, 1978

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 2,130 micromhos Mar. 3; minimum, 303 micromhos Apr. 19.
pH: Maximum, 9.4 units Feb. 26; minimum, 7.1 units Nov. 3, 8, 9, 21, Aug. 12, Sept. 29, 30.
WATER TEMPERATURES: Maximum, 30.0°C July 21, 22; minimum, 0.0°C on many days during winter period.
DISSOLVED OXYGEN: Maximum, 20.0 mg/L or higher May 3; minimum, 0.5 mg/L June 12.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1510	772	1780	1580	1650	1150	1290	1170	1020	954	1900	1730
2	1140	812	1830	1600	1200	987	1330	1240	1080	1020	2030	1880
3	1300	1050	1820	1640	1090	993	1410	1320	1110	1060	2130	1960
4	1320	1070	1830	1640	1210	1040	1510	1280	1220	1090	2080	1810
5	1350	1200	1790	1650	1200	1120	1480	1320	1210	1130	2040	1900
6	1450	1260	1850	1770	1470	1160	1510	1420	1270	1180	2020	1820
7	1380	1250	1840	1670	1410	1230	1550	1500	1320	1250	1870	1720
8	1420	1090	1670	1500	1280	1230	1510	1100	1380	1280	1970	1770
9	1110	944	1630	1480	1380	1220	1090	972	1390	1240	1970	1790
10	923	789	1510	1270	1400	1320	1130	978	1380	1250	1900	1680
11	1220	800	1590	1440	1440	1360	1150	1040	1420	1320	1820	1660
12	1570	1230	1630	1510	1460	1320	1270	1050	1500	1340	1750	1500
13	1690	1460	1700	1610	1370	1150	1350	1260	1540	1450	1520	1230
14	1780	1140	1750	1570	1170	316	1470	1250	1640	1520	1240	378
15	1330	1190	1810	1630	363	309	1370	1320	1690	1490	354	309
16	1310	1240	1750	1680	474	357	1380	1330	1760	1630	369	318
17	1340	1250	1670	1460	501	456	1410	1320	1730	1520	411	363
18	1360	1260	1520	1440	489	432	1420	1360	1630	1500	483	399
19	1460	1330	1620	1510	528	438	1450	1360	1690	1580	546	468
20	1390	1300	1590	1500	621	534	1470	1310	1700	1580	489	426
21	1420	1260	1690	1540	711	621	1510	1280	1580	1470	423	315
22	1540	1430	1640	1540	879	714	1550	1450	1600	1460	402	339
23	1530	1390	1730	1550	1020	885	1600	1480	1560	1490	531	387
24	1380	1340	1720	1630	972	930	1530	1420	1600	1490	507	382
25	1350	1270	1760	1670	918	543	1510	1340	1710	1490	774	513
26	1480	1330	1660	1390	756	531	1690	1450	1850	1710	720	513
27	1560	1460	1770	1550	891	768	1720	1520	1880	1830	498	444
28	1600	1500	1750	1590	1070	870	1540	1220	1920	1780	516	388
29	1640	1500	1850	1670	1180	1060	1210	1010	---	---	585	522
30	1690	1510	1870	1720	1190	1060	1030	930	---	---	681	576
31	1780	1640	---	---	1240	1150	999	954	---	---	789	681
MONTH	1780	772	1870	1270	1650	309	1720	930	1920	954	2130	309

04187500 OTTAWA RIVER AT ALLENTOWN, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	792	753	1050	1000	1170	1100	1400	1230	1530	1420		
2	837	744	1110	1000	1160	1140	1350	933	1590	1390		
3	885	783	1100	1060	1160	1070	843	612	1610	1270		
4	783	735	1250	1100	1190	1120	669	[illegible]	1310	1250		
5	765	687	1240	1200	1280	1180	900	[illegible]	1480	1190		
6	774	426	1250	1210	1270	1100	1250	909	1400	1260		
7	516	417	1270	1230	1250	1160	1430	969	1620	1390		
8	714	528	1300	1230	1260	1120	1040	975	1560	1190		
9	888	726	1180	1040	1400	1260	1120	1010	1500	1340		
10	1050	876	1240	1120	1390	1210	1180	1020	1570	1080		
11	918	777	1200	1110	1390	1260	1120	1030	1420	1230		
12	816	780	1250	1200	1440	1060	1150	1080	1570	1380		
13	927	825	1240	987	1160	837	1240	1130	1660	1460		
14	1000	915	984	852	837	453	1230	1170	1560	1440		
15	1110	1010	891	867	753	597	1350	1200	1510	1170		
16	1180	1090	1160	918	855	756	1410	1270	1550	1170		
17	1160	1120	1240	1150	936	864	1420	1330	1690	1410		
18	1190	948	1120	930	1060	915	1530	1280	1630	1490		
19	975	303	849	585	1180	1060	1460	1310	1710	1530		
20	387	360	780	630	1180	1080	1550	1360	1660	1190		
21	417	363	804	732	1190	1090	1450	1290	1680	1220		
22	546	423	885	801	1280	1140	1390	1310	1630	1320		
23	672	549	942	876	1390	1280	1360	1240	1450	1260		
24	717	666	870	501	1400	1300	1470	1330	1390	1220		
25	705	717	612	483	1390	1370	1440	1180	1270	1220		
26	855	768	855	630	---	---	1400	1190	---	---		
27	924	840	864	798	1330	1000	1500	1260	---	---		
28	987	909	936	870	1180	1100	1390	1280	---	---		
29	1000	954	1000	948	1270	1140	1450	1310	---	---		
30	1030	966	1040	1010	1360	1190	1500	1360	---	---		
31	---	---	1120	1060	---	---	1490	1360	---	---		
MONTH	1190	303	1300	483	1440	453	1550	468	1710	1080		
YEAR	2130	303										

04187500 OTTAWA RIVER AT ALLENTOWN, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	7.6	7.2	7.5	7.4	8.0	7.6	7.6	7.6	7.9	7.7
2	---	---	7.6	7.2	7.8	7.6	8.0	8.0	7.6	7.4	8.0	7.8
3	---	---	7.5	7.1	7.8	7.7	8.0	8.0	7.5	7.4	7.9	7.8
4	---	---	7.4	7.2	7.8	7.7	8.0	7.9	7.6	7.5	7.9	7.8
5	---	---	7.5	7.2	7.9	7.7	8.0	7.9	7.6	7.6	8.0	7.8
6	---	---	7.5	7.2	7.9	7.7	7.9	7.9	7.7	7.6	8.0	7.8
7	---	---	7.3	7.2	7.9	7.8	7.9	7.8	7.7	7.6	8.0	7.8
8	---	---	7.3	7.1	7.9	7.8	8.0	7.9	7.7	7.7	8.1	7.8
9	---	---	7.3	7.1	7.9	7.8	8.0	7.8	7.9	7.6	7.9	7.8
10	---	---	7.5	7.2	7.9	7.7	8.0	7.6	7.9	7.8	8.4	7.8
11	---	---	7.5	7.4	7.8	7.7	7.7	7.6	7.9	7.8	8.0	7.8
12	---	---	7.6	7.4	7.8	7.7	7.6	7.6	8.0	7.9	7.9	7.7
13	---	---	7.7	7.5	7.8	7.5	7.6	7.6	7.9	7.8	8.1	7.8
14	---	---	7.5	7.3	7.6	7.3	7.7	7.6	7.9	7.8	8.2	7.8
15	---	---	7.5	7.2	7.5	7.4	7.8	7.5	8.0	7.8	7.8	7.5
16	---	---	7.3	7.2	7.6	7.4	7.7	7.7	8.0	7.8	7.6	7.5
17	---	---	7.4	7.2	7.7	7.5	7.8	7.7	9.2	7.8	7.6	7.5
18	---	---	7.5	7.2	7.6	7.5	7.8	7.7	8.1	7.7	7.7	7.6
19	7.8	7.4	7.5	7.3	7.7	7.6	7.9	7.6	8.1	7.9	7.7	7.7
20	7.7	7.4	7.5	7.2	7.8	7.7	8.5	7.9	8.1	7.9	7.7	7.6
21	8.2	7.8	7.4	7.1	7.8	7.5	8.7	8.5	8.1	8.0	7.6	7.5
22	8.2	8.0	7.5	7.2	7.9	7.8	8.5	8.0	8.1	7.9	7.7	7.5
23	8.0	7.9	7.3	7.2	7.9	7.9	7.9	7.8	7.9	7.8	7.7	7.6
24	8.0	7.8	7.4	7.2	7.9	7.9	8.6	7.8	8.0	7.9	7.9	7.7
25	7.9	7.8	7.4	7.3	7.9	7.8	8.4	7.7	8.4	7.9	7.9	7.8
26	7.8	7.6	7.7	7.4	7.9	7.6	8.2	7.8	9.4	8.1	7.8	7.7
27	7.7	7.4	9.2	7.6	8.0	7.8	8.1	7.8	8.2	7.9	7.7	7.6
28	7.6	7.4	8.9	8.8	8.0	7.9	7.8	7.6	8.1	7.8	7.7	7.7
29	7.6	7.3	8.7	8.1	7.9	7.9	7.7	7.6	---	---	7.8	7.6
30	7.9	7.3	8.1	7.5	8.0	7.9	7.7	7.6	---	---	7.9	7.8
31	7.8	7.3	---	---	7.9	7.9	7.7	7.6	---	---	7.9	7.8
MONTH	8.2	7.3	9.2	7.1	8.0	7.3	8.7	7.5	9.4	7.4	8.4	7.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.9	7.9	8.7	7.6	8.3	7.6	8.0	7.3	8.7	7.4	---	---
2	8.0	7.9	8.8	7.7	8.0	7.6	7.6	7.3	8.5	7.3	---	---
3	8.1	7.8	9.0	7.9	8.2	7.6	7.6	7.2	8.2	7.3	---	---
4	7.8	7.8	8.8	7.9	8.2	7.6	7.6	7.4	8.4	7.4	---	---
5	7.9	7.8	8.3	7.6	8.4	7.6	7.4	7.4	8.3	7.3	---	---
6	7.8	7.5	8.6	7.6	8.5	7.6	7.6	7.3	8.5	7.3	---	---
7	7.6	7.5	8.5	7.6	8.0	7.6	8.0	7.3	7.6	7.3	---	---
8	7.8	7.6	8.3	7.6	8.2	7.5	8.2	7.4	8.1	7.3	---	---
9	7.9	7.8	8.6	7.6	8.4	7.5	8.2	7.4	7.9	7.2	---	---
10	7.9	7.9	8.7	7.6	8.5	7.6	8.1	7.5	7.8	7.2	---	---
11	7.9	7.9	8.7	7.8	8.5	7.5	8.2	7.4	7.7	7.2	---	---
12	8.0	7.9	8.6	7.8	8.0	7.5	8.3	7.5	7.6	7.1	---	---
13	8.1	7.9	8.5	7.8	8.1	7.5	8.5	7.5	8.0	7.2	---	---
14	8.1	8.0	8.2	7.5	7.8	7.4	8.6	7.4	8.1	7.2	---	---
15	8.2	7.9	7.9	7.7	7.4	7.4	8.9	7.4	8.0	7.2	---	---
16	8.2	7.9	8.1	7.8	7.5	7.4	8.8	7.5	8.0	7.2	---	---
17	8.2	7.9	8.3	7.9	7.6	7.4	8.9	7.5	8.1	7.3	---	---
18	8.1	7.8	8.4	7.6	8.2	7.4	8.6	7.5	8.1	7.2	---	---
19	7.9	7.5	8.1	7.5	8.3	7.5	8.9	7.4	7.5	7.2	---	---
20	7.7	7.6	7.6	7.5	8.3	7.5	8.6	7.3	7.9	7.3	---	---
21	7.7	7.6	7.8	7.6	8.4	7.6	9.2	7.6	7.8	7.3	---	---
22	7.8	7.7	8.2	7.6	8.3	7.6	9.3	7.8	7.8	7.2	---	---
23	7.9	7.8	7.9	7.6	8.5	7.7	8.8	7.6	7.9	7.2	---	---
24	8.0	7.8	7.8	7.4	8.6	7.6	8.0	7.4	8.0	7.2	---	---
25	8.0	7.9	7.6	7.6	8.5	7.5	8.3	7.2	7.2	7.2	---	---
26	8.1	7.9	7.6	7.6	---	---	8.5	7.3	---	---	8.0	7.3
27	8.2	7.9	7.8	7.6	7.9	7.3	8.6	7.4	---	---	7.9	7.2
28	8.2	7.8	8.0	7.6	8.4	7.3	8.7	7.4	---	---	7.9	7.2
29	8.1	7.6	8.2	7.6	8.8	7.3	8.3	7.4	---	---	7.9	7.1
30	8.4	7.5	8.2	7.5	8.7	7.3	8.0	7.3	---	---	7.5	7.1
31	---	---	8.2	7.6	---	---	8.5	7.3	---	---	---	---
MONTH	8.4	7.5	9.0	7.4	8.8	7.3	9.3	7.2	8.7	7.1	8.0	7.1
YEAR	9.4	7.1										

04187500 OTTAWA RIVER AT ALLENTOWN, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	19.0	17.5	16.0	14.0	---	---	---	---	.5	.5	6.0	3.5
2	17.5	16.0	16.5	14.0	5.5	4.5	---	---	.5	.0	3.5	1.5
3	16.0	14.0	17.5	15.5	5.0	4.0	---	---	.0	.0	4.5	2.0
4	16.0	13.0	17.5	16.0	4.5	3.5	---	---	.0	.0	4.0	1.0
5	16.5	14.0	16.0	14.5	3.5	.5	---	---	.0	.0	3.5	.5
6	17.0	15.5	17.0	15.0	2.5	.0	---	---	.5	.0	5.5	2.0
7	15.5	13.5	17.0	17.0	.0	.0	---	---	.0	.0	5.0	3.0
8	16.5	13.5	17.0	16.0	.0	.0	---	---	.5	.0	3.5	2.5
9	15.5	12.5	17.0	15.5	.0	.0	---	---	.0	.0	6.0	1.5
10	13.0	11.5	17.0	10.0	.0	.0	.0	.0	.0	.0	7.0	3.5
11	13.0	11.0	10.0	7.5	.0	.0	.0	.0	.5	.0	6.5	4.0
12	11.5	10.0	8.0	6.0	.0	.0	.0	.0	1.5	.5	7.5	5.0
13	12.5	10.0	7.5	5.5	4.5	.0	.0	.0	2.0	1.0	---	---
14	13.0	10.5	7.5	6.0	3.5	1.0	.0	.0	2.5	.5	7.5	1.0
15	12.5	11.0	9.5	7.5	1.5	.5	.0	.0	2.0	.0	2.0	.5
16	12.5	10.5	11.5	9.5	4.0	1.0	.0	.0	3.5	2.0	1.5	.5
17	11.0	8.5	11.0	9.0	5.5	4.0	.0	.0	3.0	1.0	1.5	.0
18	12.0	10.0	9.0	7.0	6.0	5.5	.0	.0	2.5	.0	2.0	.0
19	12.0	11.0	7.0	6.0	7.0	6.0	.0	.0	2.5	.0	3.0	.5
20	13.5	11.0	10.5	7.0	7.0	5.5	.0	.0	2.0	.0	2.5	.5
21	14.0	11.0	11.0	8.5	5.5	4.5	.0	.0	2.0	.0	4.5	2.5
22	15.5	12.5	8.5	6.5	4.5	4.0	.0	.0	3.0	.5	5.0	1.5
23	14.0	12.5	8.0	7.0	6.0	4.0	.0	.0	2.5	.0	5.0	4.0
24	15.0	12.0	8.0	7.5	6.5	5.0	1.0	.0	3.5	1.5	4.0	1.5
25	15.0	14.0	7.5	5.5	6.0	2.5	3.5	1.5	4.5	3.0	2.5	1.5
26	16.0	15.0	5.5	2.0	2.5	.5	3.5	.5	4.5	2.5	2.5	2.0
27	15.5	14.0	2.0	1.0	1.5	1.0	1.5	.5	4.5	1.0	2.5	1.5
28	16.0	13.5	3.5	1.5	---	---	.5	.5	3.5	2.5	5.5	2.0
29	15.0	12.5	3.5	2.5	---	---	.5	.5	---	---	7.5	5.5
30	15.0	12.5	7.5	3.5	---	---	1.0	.5	---	---	7.0	5.5
31	14.5	12.0	---	---	---	---	1.0	.0	---	---	10.5	5.5
MONTH	19.0	8.5	17.5	1.0	7.0	.0	3.5	.0	5.5	.0	10.5	.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	13.5	10.0	16.0	11.5	26.5	21.5	25.5	23.5	26.5	22.0	---	---
2	11.0	7.0	17.0	12.0	25.0	21.5	23.5	22.5	25.0	23.0	---	---
3	9.5	7.0	17.0	12.5	24.0	20.0	22.0	20.5	26.5	23.5	---	---
4	10.5	8.0	15.0	11.5	23.5	19.5	21.5	19.5	25.0	21.5	---	---
5	12.0	9.0	12.5	11.5	24.5	20.0	22.0	20.0	24.0	20.5	---	---
6	11.0	9.5	12.5	11.0	24.5	20.0	26.0	20.5	25.5	22.0	---	---
7	11.5	9.0	12.5	11.0	23.0	22.0	27.5	23.5	24.0	22.0	---	---
8	11.5	10.0	14.5	12.0	24.0	21.0	27.5	24.0	25.0	21.0	---	---
9	10.5	8.5	16.0	13.0	24.5	20.0	27.0	23.0	26.0	22.5	---	---
10	15.0	9.0	17.5	13.0	25.0	20.0	26.0	23.5	26.5	23.0	---	---
11	13.5	11.5	17.0	14.0	26.0	21.0	25.0	20.5	25.5	22.5	---	---
12	14.5	10.0	16.5	16.0	24.0	21.5	25.0	20.0	25.5	23.0	---	---
13	13.0	11.5	18.0	15.5	21.0	18.0	25.5	22.0	27.5	22.5	---	---
14	13.5	9.5	16.0	14.0	19.5	16.5	28.0	24.0	27.0	23.5	---	---
15	14.5	9.5	14.0	13.5	20.5	18.0	27.5	24.0	28.0	24.5	---	---
16	13.5	10.0	15.0	13.0	22.5	18.0	27.0	23.0	28.5	25.0	---	---
17	15.0	10.0	19.0	13.5	23.5	21.0	27.0	22.0	27.5	23.5	---	---
18	13.0	10.0	21.5	16.5	25.5	22.0	26.5	23.0	27.5	24.0	---	---
19	11.0	10.0	21.0	17.5	26.5	22.5	28.0	23.5	26.5	24.0	---	---
20	10.0	7.5	21.5	18.0	26.0	22.5	28.5	25.0	25.5	21.5	---	---
21	7.5	6.5	20.0	17.0	26.5	23.5	30.0	26.5	25.0	20.0	---	---
22	9.5	6.0	18.5	15.0	25.0	20.5	30.0	26.5	25.5	21.0	---	---
23	9.0	8.5	18.0	16.5	26.0	21.0	28.0	25.5	27.0	22.5	---	---
24	12.0	8.5	17.5	16.0	26.0	22.5	25.0	23.5	27.5	23.5	---	---
25	11.5	10.0	19.0	15.5	25.0	23.0	26.5	23.0	26.0	24.5	---	---
26	14.0	9.0	23.0	17.5	---	---	29.0	24.5	---	---	19.5	18.0
27	16.0	10.5	24.0	19.5	29.0	24.0	27.5	25.0	---	---	20.0	16.5
28	17.5	11.5	25.0	21.0	29.0	25.5	26.5	22.5	---	---	19.0	16.5
29	18.0	13.0	26.0	21.5	29.5	25.0	25.0	23.0	---	---	18.5	15.0
30	17.5	13.0	25.0	22.5	28.0	25.0	23.5	22.0	---	---	18.0	16.0
31	---	---	26.0	21.5	---	---	24.5	20.5	---	---	---	---
MONTH	18.0	6.0	26.0	11.0	29.5	16.5	30.0	19.5	28.5	20.0	20.0	15.0
YEAR	30.0	.0										

04187500 OTTAWA RIVER AT ALLENTOWN, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	7.8	2.4	7.6	5.8	12.0	11.7	13.4	13.2	12.7	11.7
2	---	---	8.0	2.3	10.2	7.8	12.5	11.9	13.6	11.1	---	---
3	---	---	7.0	2.1	10.0	9.1	12.6	12.2	12.1	11.0	---	---
4	---	---	6.4	2.3	10.5	9.3	12.3	12.0	12.5	11.8	---	---
5	---	---	7.0	2.1	10.9	9.5	12.0	11.3	12.8	11.7	---	---
6	---	---	7.3	2.0	10.8	9.9	11.5	11.2	12.9	11.3	---	---
7	---	---	4.0	2.2	11.2	10.4	11.2	10.8	12.9	12.6	---	---
8	---	---	5.4	2.0	11.2	10.8	11.1	9.6	13.2	12.6	---	---
9	---	---	6.0	2.0	11.2	10.4	12.2	11.1	12.8	12.6	---	---
10	---	---	5.3	2.0	11.2	10.2	11.9	11.5	12.9	12.7	---	---
11	---	---	6.6	2.1	10.6	10.3	12.4	11.4	12.9	12.8	---	---
12	---	---	8.2	3.6	10.4	9.6	12.3	11.6	13.1	12.8	---	---
13	---	---	9.3	3.7	9.7	8.8	11.6	11.8	12.9	11.9	---	---
14	---	---	8.4	3.9	12.3	9.5	12.0	11.3	12.3	12.1	12.9	9.0
15	---	---	7.6	4.0	12.3	10.9	11.8	11.0	12.6	12.3	11.7	10.2
16	---	---	5.6	3.5	12.1	11.5	12.1	11.7	12.4	12.2	10.3	10.0
17	---	---	6.9	3.4	11.7	11.4	12.0	11.5	12.8	12.2	10.1	9.9
18	---	---	7.6	4.6	11.4	11.0	12.0	11.6	12.8	12.4	10.2	9.9
19	6.7	5.0	7.7	4.7	11.5	11.2	11.8	11.4	12.8	12.5	10.1	9.9
20	7.3	4.3	8.3	4.9	11.6	11.1	12.3	11.8	13.0	12.5	10.3	9.9
21	7.0	3.8	---	---	11.9	11.6	12.3	12.0	12.8	12.5	9.7	9.2
22	6.7	3.6	---	---	12.0	11.8	12.3	12.1	12.9	12.2	10.6	9.4
23	6.8	3.3	---	---	11.9	11.5	12.2	12.1	12.3	12.1	9.7	9.3
24	7.2	3.5	---	---	11.7	11.1	12.0	11.6	12.1	11.7	10.2	9.7
25	5.3	3.0	---	---	12.4	11.3	11.6	11.1	11.6	11.5	10.3	9.9
26	5.0	2.6	---	---	12.7	12.4	13.2	11.2	11.8	11.4	10.1	9.7
27	6.1	2.4	4.8	2.6	12.8	11.3	13.4	13.1	12.1	11.7	10.1	9.7
28	6.4	2.6	4.8	3.9	12.8	11.4	13.3	13.1	12.6	12.2	10.8	9.1
29	6.5	2.6	9.1	3.4	12.5	11.9	13.5	13.3	---	---	9.6	9.2
30	7.0	2.6	7.4	6.0	12.0	11.6	13.6	13.5	---	---	9.5	7.0
31	7.6	2.6	---	---	12.1	11.6	13.6	13.0	---	---	9.5	7.0
MONTH	7.6	2.4	9.3	2.0	12.8	5.8	13.6	9.6	13.6	11.0	12.9	7.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.7	8.2	17.5	4.1	11.1	2.5	6.8	.6	13.6	1.8	---	---
2	8.9	8.2	19.1	4.1	8.3	2.1	3.4	.9	10.9	1.7	---	---
3	9.4	8.6	20.0	4.5	10.9	2.8	5.2	1.2	10.3	1.4	---	---
4	9.1	8.3	12.7	4.8	9.8	2.3	6.3	5.1	11.5	1.4	---	---
5	8.9	8.3	12.6	3.9	11.3	2.2	4.9	3.7	11.1	1.5	---	---
6	8.5	8.0	15.5	4.1	12.5	2.0	6.8	2.9	13.1	1.3	---	---
7	8.6	8.1	15.0	5.1	7.9	1.8	8.8	1.5	5.0	1.4	---	---
8	8.4	8.1	11.8	5.3	10.3	1.5	9.6	1.7	9.2	1.5	---	---
9	8.8	8.4	15.4	5.4	16.5	1.3	10.0	1.7	8.9	1.2	---	---
10	9.8	8.3	13.9	4.8	17.9	3.4	9.0	1.4	7.0	1.3	---	---
11	---	---	16.3	5.6	13.4	1.2	10.6	2.4	7.9	1.2	---	---
12	10.5	9.4	11.3	5.6	6.7	.5	11.7	2.8	7.5	1.2	---	---
13	11.5	9.1	11.6	6.3	5.4	.6	12.6	2.8	9.6	1.2	---	---
14	11.5	9.4	11.1	5.6	5.8	3.7	14.1	2.2	9.4	1.2	---	---
15	12.0	9.1	10.9	7.3	4.0	3.2	16.9	2.1	9.3	1.3	---	---
16	12.9	8.6	10.7	6.3	4.1	2.3	15.8	2.3	9.2	1.2	---	---
17	13.2	8.6	12.7	6.8	5.3	1.7	16.8	2.8	9.2	1.2	---	---
18	10.8	8.0	12.5	4.5	9.5	1.7	15.9	2.5	9.3	1.2	---	---
19	9.9	7.9	7.4	4.9	11.2	1.5	16.6	2.0	5.1	1.1	---	---
20	10.3	9.0	7.1	5.5	10.7	1.2	13.3	1.6	7.3	1.3	---	---
21	10.7	10.3	8.0	5.2	10.9	.8	19.3	2.1	7.2	1.4	---	---
22	10.9	10.4	10.8	5.8	10.6	1.4	19.3	2.5	8.1	1.3	---	---
23	10.3	9.7	7.8	5.0	12.1	1.1	10.5	2.3	8.8	1.3	---	---
24	10.6	9.6	7.1	4.2	13.0	1.4	8.2	1.7	9.3	1.2	---	---
25	10.3	9.1	7.7	6.7	12.3	.9	10.8	1.7	2.7	1.1	---	---
26	11.1	8.9	6.8	5.3	---	---	12.7	1.4	---	---	10.0	2.7
27	11.8	7.7	7.8	5.1	8.6	1.6	12.9	1.3	---	---	10.1	2.0
28	12.1	6.3	9.1	4.2	11.3	.6	14.6	1.5	---	---	10.3	1.9
29	12.7	4.3	10.6	3.6	15.6	.6	9.5	1.6	---	---	10.3	2.1
30	16.4	3.1	10.2	3.0	13.7	.6	8.8	1.5	---	---	8.1	2.0
31	---	---	10.1	3.0	---	---	12.6	1.7	---	---	---	---
MONTH	16.4	3.1	20.0	3.0	17.9	.5	19.3	.6	13.6	1.1	10.3	1.9
YEAR	20.0	.5										

04188200 AUGLAIZE RIVER AT CLOVERDALE, OH

LOCATION.--Lat 41°01'08", long 84°17'20", in NE 1/4 sec. 28, T.1N., R.5E., Putnam County, Hydrologic Unit 04100007, on left bank at old bridge abutment, 0.2 mi (0.3 km) upstream from bridge on State Route 114, 2.5 mi (4.0 km) upstream from Blanchard River, 4.5 mi (7.2 km) downstream from Ottawa River, and 0.8 mi (1.3 km) east of Cloverdale.

DRAINAGE AREA.--713 mi² (1,847 km²).

PERIOD OF RECORD.--Water years 1967 to September 1978 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1967 to September 1978 (discontinued).
pH: June 1967 to September 1978 (discontinued).
WATER TEMPERATURES: June 1967 to September 1978 (discontinued).
DISSOLVED OXYGEN: June 1967 to September 1978 (discontinued).

INSTRUMENTATION.--Water quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Dissolved oxygen concentrations listed as 15.0 mg/L represent concentrations of 15.0 mg/L or higher due to instrument limitations prior to March 29, 1978; 20.0 mg/L limitation thereafter. No discharge records available.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 2,190 micromhos May 11, 1978; minimum, 120 micromhos Dec. 13, 1977.
pH: Maximum, 10.5 units Dec. 4-6, 18-26, 1969, Jan. 2, 6, 1970; minimum, 4.5 units Oct. 3, 1969.
WATER TEMPERATURES: Maximum, 31.5°C July 22, 1978; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 16.6 mg/L June 29, 1978; minimum, 0.0 mg/L Aug. 27, 1974.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 2,190 micromhos May 11; minimum, 120 micromhos Dec. 13.
pH: Maximum recorded, 9.6 units Oct. 8; minimum recorded, 6.8 units Jan. 18.
WATER TEMPERATURES: Maximum, 31.5°C July 22; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum recorded, 16.6 mg/L June 29; minimum recorded, 4.6 mg/L Aug. 30.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1030	999	1260	1210	1240	822	873	861	999	861	1360	1250
2	1210	1020	1290	1250	1130	873	897	867	858	828	1390	1320
3	1150	921	1290	1270	1040	960	951	900	858	825	1380	1350
4	912	864	1310	1280	954	876	975	939	894	831	1380	1320
5	906	870	1360	1310	900	864	1060	984	897	879	1410	1350
6	990	870	1410	1360	897	870	1070	1060	915	888	1420	1370
7	999	990	1400	1380	939	900	1080	1020	936	906	1430	1390
8	1040	993	1400	1390	957	942	1030	1000	978	936	1430	1380
9	1070	924	1450	1400	1010	957	1100	1010	1010	942	1450	1430
10	1100	1060	1410	1350	---	---	1110	927	1020	948	1430	1370
11	1070	957	1400	1330	---	---	948	897	1020	996	1430	1380
12	951	909	1390	1280	---	---	987	894	1060	1010	1430	1350
13	915	894	1280	1220	672	120	885	849	1040	1020	1330	1210
14	897	879	1240	1220	---	---	855	831	1090	1040	1170	630
15	957	882	1230	1190	---	---	870	840	1100	1060	606	264
16	1120	966	1260	1240	---	---	975	873	1140	1090	255	198
17	1160	1120	1240	1210	---	---	1040	975	1170	1130	207	189
18	1180	1030	1250	1220	---	---	1070	1030	1230	1160	225	207
19	1070	1030	1260	1250	---	---	1070	1040	1250	1180	276	228
20	1110	1070	1270	1260	---	---	1070	1040	1260	1200	318	282
21	1110	1080	1260	1220	528	453	1090	1060	1260	1210	306	264
22	1120	1090	1220	1180	585	531	1090	1060	1240	1200	267	237
23	1110	1080	1200	1180	654	588	1130	1070	1270	1210	288	243
24	1150	1120	1230	1210	693	657	1110	1090	1250	1220	351	291
25	1150	1130	1230	1220	687	615	1170	1100	1220	1200	423	351
26	1160	1140	1240	1220	666	591	1170	1150	1240	1200	519	423
27	1270	1150	1270	1220	609	585	1220	1170	1270	1210	420	342
28	1300	1260	1280	1260	672	609	1210	1150	1280	1220	345	336
29	1270	1210	1360	1280	723	678	1230	1110	---	---	393	336
30	1220	1190	1370	1250	789	729	1250	1180	---	---	453	396
31	1220	1180	---	---	861	798	1170	1010	---	---	522	453
MONTH	1300	864	1450	1180	1240	120	1250	831	1280	825	1450	189

04188200 AUGLAIZE RIVER AT CLOVERDALE, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	528	507	750	726	834	804	1060	918	1290	1260		
2	519	507	765	753	870	819	1050	774	1290	1260		
3	564	522	768	738	906	855	771	594	1310	1280		
4	573	549	768	627	918	876	837	690	1300	1260		
5	585	543	810	723	939	894	726	645	1420	1280		
6	579	378	807	753	951	858	696	636	1400	1390		
7	369	300	---	---	939	906	714	675	1390	1290		
8	387	306	---	---	939	927	753	705	1310	1190		
9	507	393	870	864	1010	933	882	747	1190	1170		
10	603	510	915	867	1030	975	1050	888	1230	1180		
11	657	603	2190	816	1010	975	987	936	1220	1180		
12	675	627	---	---	987	951	945	924	1300	1190		
13	669	651	891	864	1080	969	948	927	1220	1120		
14	702	663	876	846	1130	1040	975	939	1220	1130		
15	750	702	834	756	1150	756	984	960	1250	1210		
16	783	738	759	732	744	663	996	972	1230	1130		
17	822	768	732	696	768	672	1030	966	1130	1090		
18	807	768	735	687	786	762	1030	993	1230	1130		
19	762	705	897	726	837	774	1060	1000	1280	1210		
20	684	384	963	756	849	810	1110	924	1410	1280		
21	378	351	750	648	849	801	1140	906	1430	1400		
22	420	351	726	639	870	819	1190	1110	1390	1170		
23	495	411	750	717	921	849	1270	1200	1420	1160		
24	576	495	843	750	975	903	1230	1190	1500	1190		
25	612	567	879	618	975	951	1230	1210	1500	1160		
26	654	603	618	561	1010	963	1310	1220	1580	1470		
27	687	633	654	564	1040	1000	1310	1300	1480	1110		
28	714	663	732	636	1130	1010	1300	1260	1440	1010		
29	744	699	759	717	1120	1040	1280	1250	1520	1250		
30	750	714	777	738	1040	984	1260	1250	1530	1230		
31	---	---	807	696	---	---	1310	1260	1430	1290		
MONTH	822	300	2190	561	1150	663	1310	594	1530	1010		
YEAR	2190	120										

04188200 AUGLAIZE RIVER AT CLOVERDALE, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.3	7.7	7.8	7.5	7.8	7.5	---	---	8.1	7.6	8.4	7.3
2	8.6	8.1	8.0	7.6	8.0	7.9	---	---	8.0	7.4	8.6	7.5
3	8.6	8.3	7.9	7.7	7.9	7.5	---	---	8.0	7.2	7.8	7.5
4	8.7	8.0	7.9	7.7	8.1	7.2	---	---	8.0	7.2	8.0	7.6
5	8.6	7.9	7.9	7.7	8.3	7.7	---	---	7.9	7.5	8.0	7.6
6	8.3	8.0	7.9	7.6	8.2	7.5	---	---	8.0	7.5	8.1	7.6
7	8.3	8.1	7.9	7.7	8.1	7.0	---	---	8.1	7.6	7.8	7.5
8	9.6	8.0	7.9	7.8	7.9	7.0	---	---	8.0	7.1	7.9	7.6
9	8.2	8.0	7.9	7.4	8.0	7.8	---	---	8.0	6.9	7.8	7.6
10	8.1	8.0	---	---	---	---	---	---	8.2	7.3	7.9	7.5
11	8.1	7.9	---	---	---	---	7.8	7.8	8.1	7.4	7.9	7.5
12	8.2	8.0	---	---	---	---	7.8	7.2	7.9	7.2	7.9	7.6
13	8.2	8.0	---	---	---	---	7.7	7.3	8.2	7.8	7.8	7.5
14	8.2	8.1	---	---	---	---	7.8	7.3	8.1	7.3	7.8	7.5
15	8.5	8.1	---	---	---	---	7.8	7.4	8.3	7.4	7.8	7.4
16	8.3	8.1	---	---	---	---	7.9	7.4	8.1	7.5	7.7	7.4
17	8.1	8.0	---	---	---	---	8.1	7.6	8.3	7.8	7.7	7.4
18	8.1	7.9	---	---	---	---	7.7	6.8	8.3	7.2	7.7	7.4
19	8.9	7.8	---	---	---	---	8.0	7.3	8.2	7.2	7.7	7.4
20	8.1	7.7	---	---	---	---	8.1	7.5	8.3	7.1	7.7	7.4
21	7.8	7.6	---	---	---	---	7.9	7.5	8.4	7.0	---	---
22	7.9	7.5	---	---	---	---	8.0	7.5	8.2	7.4	7.8	7.5
23	7.9	7.5	---	---	---	---	8.0	7.2	8.2	7.4	---	---
24	8.2	7.7	---	---	---	---	7.8	7.4	8.2	7.8	7.7	7.6
25	8.0	7.6	---	---	---	---	7.9	7.4	8.2	7.9	8.1	7.7
26	8.2	7.7	---	---	---	---	8.4	7.7	8.3	7.6	---	---
27	7.8	7.7	---	---	---	---	8.2	8.1	8.4	7.1	---	---
28	7.9	7.7	---	---	---	---	8.2	8.0	8.2	7.2	---	---
29	7.8	7.6	---	---	---	---	8.2	8.1	---	---	---	---
30	7.8	7.5	---	---	---	---	8.2	7.9	---	---	7.8	7.7
31	7.8	7.7	---	---	---	---	8.1	7.8	---	---	---	---
MONTH	9.6	7.5	8.0	7.4	8.3	7.0	8.4	6.8	8.4	6.9	8.6	7.3

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
MONTH												
YEAR	9.6	6.8										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04188200 AUGLAIZE RIVER AT CLOVERDALE, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	18.5	17.5	14.5	12.5	3.5	1.0	.0	.0	.5	.0	.5	.5
2	17.0	16.5	15.0	13.0	4.0	3.5	.0	.0	.5	.5	.5	.0
3	16.5	15.0	15.5	14.0	4.0	3.0	.0	.0	.5	.5	.5	.0
4	15.5	14.0	15.5	14.5	3.0	1.5	.5	.0	.5	.5	.0	.0
5	15.5	14.0	14.5	14.0	1.5	.5	.5	.0	.5	.5	.5	.0
6	16.0	14.5	15.5	14.0	.5	.5	.5	.0	.5	.5	.5	.0
7	15.0	13.5	15.5	15.0	.5	.5	.5	.0	.5	.5	.5	.0
8	15.0	13.5	16.0	15.0	.5	.5	.5	.0	.5	.5	.5	.0
9	14.5	12.5	16.0	15.0	.5	.5	.0	.0	.5	.5	.5	.0
10	13.0	12.0	15.5	10.5	---	---	.0	.0	.5	.5	.5	.0
11	12.5	12.0	10.5	7.0	---	---	.5	.0	.5	.5	.5	.0
12	11.5	10.5	7.0	5.5	---	---	.5	.0	.5	.5	.5	.0
13	11.0	9.5	5.5	4.5	.5	.0	.5	.5	.5	.5	.5	.0
14	11.0	9.5	5.0	4.0	---	---	.5	.5	.5	.5	.5	.0
15	10.5	10.0	6.0	4.5	---	---	.5	.5	.5	.5	.5	.0
16	10.5	9.5	8.0	6.0	---	---	.5	.0	.5	.5	.5	.0
17	9.5	8.0	8.5	7.5	---	---	.5	.0	.5	.5	.5	.0
18	10.0	8.5	7.5	6.0	---	---	.5	.5	.5	.5	.5	.0
19	11.0	9.5	5.5	5.0	---	---	.5	.5	.5	.5	.5	.0
20	11.5	9.5	7.5	5.0	---	---	.5	.5	.5	.5	.5	.0
21	12.0	10.0	8.0	7.0	4.0	2.0	.5	.5	.5	.5	1.5	.5
22	13.0	11.0	7.0	5.5	2.0	1.0	.5	.5	.5	.5	3.5	1.0
23	12.5	11.5	5.5	5.0	1.0	.5	.5	.5	.5	.5	4.5	3.5
24	13.0	11.0	5.5	5.0	2.0	1.0	.5	.5	.5	.5	4.5	2.5
25	13.5	12.5	5.0	3.5	2.5	.5	.5	.5	.5	.5	2.5	1.5
26	14.5	13.5	3.5	1.0	.5	.0	.5	.0	.5	.5	2.0	1.5
27	14.0	13.0	1.0	.5	.0	.0	.5	.0	.5	.5	2.0	2.0
28	14.0	12.5	1.0	.5	.0	.0	.5	.0	.5	.5	4.5	2.0
29	13.5	12.0	1.0	.5	.0	.0	.5	.0	---	---	6.0	4.5
30	13.5	11.5	1.0	.5	.5	.0	.5	.5	---	---	6.0	5.5
31	13.0	11.5	---	---	.5	.0	.5	.5	---	---	8.5	6.0
MONTH	18.5	8.0	16.0	.5	4.0	.0	.5	.0	.5	.0	8.5	.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.0	8.5	15.5	13.5	26.0	23.5	26.5	24.0	25.5	22.0	22.5	20.0
2	11.0	7.0	16.0	15.0	25.0	23.0	24.0	21.0	25.0	23.0	23.5	20.5
3	8.5	6.5	16.0	13.5	23.5	21.5	21.0	20.0	26.5	23.5	24.5	21.5
4	9.5	8.5	14.5	10.5	23.0	21.5	21.0	19.5	25.0	22.0	24.0	21.5
5	10.5	9.0	12.0	9.5	23.5	21.0	22.0	21.0	24.5	21.5	24.5	21.0
6	10.5	9.5	12.0	11.0	24.0	21.5	23.5	21.0	25.0	22.5	25.0	22.0
7	12.0	9.0	---	---	23.5	22.5	26.0	23.5	23.5	22.0	25.5	22.5
8	12.0	10.5	---	---	24.0	22.0	27.0	25.0	24.5	21.0	26.5	23.0
9	10.0	8.5	14.5	14.0	24.0	21.5	26.5	25.0	25.5	22.5	26.5	23.5
10	12.0	8.0	16.5	13.5	24.5	21.5	26.0	25.0	25.5	23.0	27.0	24.0
11	13.5	12.0	19.5	14.5	25.0	22.5	24.5	22.5	25.0	23.5	26.5	24.0
12	13.0	11.5	---	---	24.0	22.0	25.0	21.5	25.5	23.5	25.0	23.5
13	12.5	11.5	17.0	15.5	22.0	19.5	25.5	23.0	26.5	23.5	23.5	21.5
14	11.5	10.0	16.0	15.0	21.5	18.5	26.5	23.5	27.0	24.0	23.0	22.5
15	12.5	10.0	15.0	14.0	21.5	19.5	27.5	24.5	28.0	25.0	23.5	21.0
16	12.5	10.5	14.5	13.5	21.5	20.0	26.5	24.0	28.0	25.5	23.5	21.5
17	13.5	11.0	16.5	13.5	23.5	21.5	26.5	23.0	27.5	24.5	24.5	22.5
18	12.0	10.5	19.0	16.0	24.5	22.5	26.5	23.5	27.0	24.5	25.5	23.5
19	10.5	9.5	22.0	18.5	25.5	23.0	27.5	24.5	26.0	23.5	26.5	24.0
20	10.5	8.5	22.5	20.5	25.5	23.5	29.0	25.5	25.0	22.0	27.0	25.0
21	8.5	7.0	21.0	18.0	26.0	24.5	30.0	27.0	24.5	21.5	26.0	23.5
22	8.5	6.5	18.0	16.5	25.5	22.5	31.5	26.0	25.0	21.5	23.5	20.5
23	9.0	8.5	17.0	17.0	25.5	22.5	29.0	25.5	26.0	22.0	21.0	19.0
24	10.5	8.5	18.5	16.5	26.0	23.5	25.0	21.5	26.5	23.5	21.0	18.0
25	11.5	10.5	19.0	17.5	25.5	24.0	26.5	23.5	25.5	24.5	20.0	18.0
26	12.0	10.0	20.5	18.5	25.5	23.0	28.5	24.5	25.5	23.0	19.5	16.5
27	14.0	10.5	23.0	20.0	28.0	24.5	27.5	25.0	26.0	23.5	19.5	16.5
28	15.5	12.5	24.0	22.5	28.5	26.0	26.5	23.5	25.5	23.5	18.5	16.0
29	17.0	14.5	25.0	23.0	28.5	26.0	25.5	23.5	25.0	23.5	18.0	15.0
30	16.5	14.5	25.0	24.0	28.0	26.0	24.0	22.5	24.0	21.0	18.0	16.0
31	---	---	25.0	23.0	---	---	24.0	21.5	22.5	20.0	---	---
MONTH	17.0	6.5	25.0	9.5	28.5	18.5	31.5	19.5	28.0	20.0	27.0	15.0
YEAR	31.5	.0										

04188200 AUGLAIZE RIVER AT CLOVERDALE, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.9	7.8	8.8	5.8	11.1	9.9	---	---	9.4	9.2	7.2	6.6
2	8.5	7.5	10.0	6.9	10.2	9.8	---	---	9.2	8.9	7.1	6.8
3	8.8	7.0	9.7	7.3	10.5	9.7	---	---	8.9	8.8	7.1	6.9
4	9.7	8.1	8.5	7.0	11.2	10.4	---	---	8.7	8.5	6.9	6.6
5	8.9	7.7	8.5	6.9	11.6	11.0	---	---	8.4	8.1	6.8	6.7
6	9.6	8.2	8.7	6.9	13.1	11.6	---	---	8.1	7.9	7.0	6.8
7	10.1	8.6	7.7	6.6	13.6	12.8	---	---	8.0	7.7	7.2	7.0
8	10.1	8.8	7.1	6.0	13.1	12.5	---	---	8.0	7.9	7.2	6.8
9	8.9	7.8	7.4	5.9	13.1	12.5	---	---	8.0	7.8	7.0	6.7
10	8.9	7.7	8.2	7.0	---	---	---	---	7.9	7.8	7.4	6.9
11	8.5	7.8	8.8	7.3	---	---	12.8	12.6	8.0	7.8	7.1	6.7
12	9.0	8.1	10.3	8.4	---	---	12.6	12.4	7.9	7.4	7.6	6.7
13	9.4	8.5	11.1	10.0	---	---	12.8	12.5	7.5	7.4	8.9	7.5
14	9.5	8.6	11.4	10.7	---	---	12.5	11.9	7.5	7.4	---	---
15	8.7	8.1	11.2	10.4	---	---	11.8	11.4	7.4	7.3	---	---
16	8.7	7.6	10.6	9.7	---	---	11.4	11.1	7.4	7.1	---	---
17	8.6	8.1	9.9	9.0	---	---	11.2	11.1	7.3	7.1	---	---
18	8.5	8.0	10.0	9.0	---	---	11.4	11.2	7.3	7.2	---	---
19	8.3	7.6	10.4	9.4	---	---	11.4	11.2	7.2	6.9	---	---
20	8.3	7.5	10.8	9.7	---	---	11.2	10.9	7.1	6.9	---	---
21	8.5	7.4	11.1	9.6	11.9	11.5	10.9	10.7	7.4	6.9	---	---
22	8.9	7.4	11.4	10.0	12.6	11.9	10.8	10.5	7.5	7.2	---	---
23	8.8	7.3	11.4	10.7	14.2	12.6	10.4	10.2	7.2	7.0	---	---
24	9.4	7.1	11.6	10.4	---	---	10.4	10.2	7.3	7.1	---	---
25	9.3	7.6	11.6	10.6	---	---	10.3	9.8	7.4	7.2	---	---
26	7.8	6.2	12.0	10.8	---	---	9.8	9.1	7.6	7.2	---	---
27	8.2	5.5	12.2	11.3	---	---	9.0	8.1	7.3	6.9	---	---
28	8.1	5.5	11.9	11.0	---	---	8.1	7.5	7.3	6.9	---	---
29	8.1	5.6	12.0	11.1	---	---	7.8	7.0	---	---	---	---
30	8.2	5.7	11.5	11.0	---	---	8.6	7.8	---	---	11.9	8.9
31	8.4	5.9	---	---	---	---	9.2	8.4	---	---	11.8	11.4
MONTH	10.1	5.5	12.2	5.8	14.2	9.7	12.8	7.0	9.4	6.9	11.9	6.6

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.4	10.8	13.4	10.1	15.3	8.0	11.9	10.4	---	---		
2	11.3	10.4	14.5	13.2	12.0	9.0	11.3	10.6	---	---		
3	11.8	11.3	13.9	11.9	13.0	7.5	---	---	10.2	7.4		
4	11.3	10.8	13.8	8.8	13.0	8.3	---	---	11.0	6.3		
5	10.8	10.6	14.3	9.1	12.9	8.4	---	---	11.2	6.5		
6	10.7	10.2	13.9	9.2	13.0	9.0	---	---	12.0	6.7		
7	10.2	9.7	---	---	10.1	7.1	---	---	8.7	6.0		
8	10.0	9.5	---	---	9.6	6.0	14.9	7.9	8.8	5.0		
9	10.7	10.0	13.6	11.9	11.1	6.6	13.8	8.6	9.0	5.8		
10	10.8	10.2	14.0	10.5	14.3	8.5	12.2	6.8	9.1	5.2		
11	10.1	9.0	13.6	6.5	14.5	9.5	12.7	9.1	8.7	5.9		
12	9.9	9.4	---	---	11.9	8.0	15.2	9.6	10.9	6.2		
13	9.7	9.3	12.0	8.9	10.6	6.6	14.8	8.9	11.5	6.5		
14	10.5	9.5	10.4	9.1	14.2	8.4	14.9	7.1	11.4	6.0		
15	10.8	9.9	9.9	8.1	10.6	6.7	15.1	8.4	11.4	6.9		
16	10.8	9.7	11.6	8.6	6.5	5.8	13.5	7.0	10.4	6.8		
17	11.5	9.8	12.7	9.4	7.3	5.6	12.1	8.2	10.2	7.5		
18	11.2	10.0	13.0	9.6	9.6	6.5	11.6	7.8	9.5	8.0		
19	10.4	9.4	13.5	9.9	12.0	7.3	11.3	8.5	8.0	7.3		
20	9.5	8.8	11.2	7.9	13.6	9.0	10.1	8.2	9.3	7.5		
21	10.1	9.5	8.8	7.0	13.7	8.7	---	---	9.2	7.5		
22	10.5	10.0	9.7	7.3	14.4	9.1	---	---	10.4	7.7		
23	10.3	10.0	9.5	8.3	14.8	10.1	---	---	10.1	8.8		
24	10.1	10.1	9.8	7.8	14.6	9.4	---	---	9.9	9.0		
25	10.0	9.8	7.7	6.5	13.5	8.7	---	---	9.5	8.4		
26	10.5	9.8	6.8	6.3	10.1	6.9	---	---	9.8	8.6		
27	10.6	9.7	6.6	6.0	13.4	6.6	---	---	9.8	9.0		
28	10.8	9.4	7.6	5.7	15.3	9.0	---	---	9.6	8.4		
29	11.2	9.2	10.5	6.6	16.6	10.3	---	---	7.5	5.1		
30	12.2	9.3	11.9	7.1	16.2	10.5	---	---	7.6	4.6		
31	---	---	14.3	9.7	---	---	---	---	9.3	7.7		
MONTH	12.2	8.8	14.5	5.7	16.6	5.6	15.2	6.8	12.0	4.6		
YEAR	16.6	4.6										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04189000 BLANCHARD RIVER NEAR FINDLAY, OH

LOCATION.--Lat 41°03'21", long 83°41'17", on east line of sec. 10, T.1 N., R.10 E., Hancock County, Hydrologic Unit 04100008, on left bank at upstream side of county road bridge, 2 mi (3 km) west of Findlay, 3 mi (5 km) downstream from Eagle Creek, and 3 mi (5 km) upstream from Aurand Run.

DRAINAGE AREA.--346 mi^2 (896 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to December 1935, October 1940 to current year. Monthly discharge only for October 1923, published in WSP 1307.

REVISED RECORDS.--WSP 974: 1942. WSP 1054: 1927-30, 1933(M), 1945. WSP 1387: 1926, 1928(M), 1930(M), 1952. WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 754.55 ft (229.987 m) National Geodetic Vertical Datum of 1929. Prior to July 24, 1930, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are fair. Water is diverted upstream from station into Findlay Reservoir. Storage in Findlay Reservoir used for water supply of city of Findlay, and is available for low-flow augmentation. All water returns to stream upstream from station. No releases have been made for low-flow augmentation. Sediment data collected at this site 1970-74.

AVERAGE DISCHARGE.--50 years, 245 ft^3/s (6.938 m^3/s), 9.62 in/yr (244 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft^3/s (425 m^3/s) Feb. 11, 1959, gage height, 16.76 ft (5.108 m) from rating curve extended above 10,000 ft^3/s (283 m^3/s); minimum daily, 0.4 ft^3/s (0.011 m^3/s) Aug. 27, Sept. 3, 1934.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 18.5 ft (5.64 m); discharge, 22,000 ft^3/s (623 m^3/s), from rating curve extended above 10,000 ft^3/s (283 m^3/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,400 ft^3/s (68.0 m^3/s) and maximums (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 15	2200	6010	170	12.07	3.685	Mar. 27	1700	3560	101	9.27	2.825
Mar. 17	0300	*6400	181	*12.42	3.786	Apr. 7	0400	3280	92.9	8.81	2.685
Mar. 22	0200	5480	155	11,62	3.542	Apr. 21	0430	3870	110	9.75	2.972

Minimum daily discharge, 18 ft^3/s (0.51 m^3/s) Sept. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	83	35	399	103	322	46	917	160	73	31	23	26
2	81	36	740	77	229	44	689	138	65	90	23	23
3	95	36	488	64	196	42	863	120	60	805	35	22
4	75	36	313	60	172	41	1130	110	52	668	25	22
5	65	36	228	56	160	39	1110	110	51	386	22	22
6	59	34	188	54	140	38	1700	98	47	221	21	22
7	52	36	107	54	120	37	2900	89	58	132	181	22
8	74	37	115	178	108	37	1520	105	53	88	329	22
9	326	42	103	306	96	37	656	103	56	67	127	22
10	367	58	85	602	88	37	466	91	48	57	271	22
11	256	52	71	307	80	37	442	86	43	47	133	23
12	124	57	77	162	74	38	450	83	65	40	69	23
13	94	48	94	139	69	64	349	130	345	38	47	44
14	90	46	2010	120	65	1380	263	155	360	38	40	37
15	79	41	5080	104	59	3960	211	191	197	34	44	30
16	82	48	5420	87	53	5460	176	178	106	56	40	23
17	65	52	4790	74	48	5600	155	157	78	32	30	24
18	57	66	3820	57	45	4060	221	180	61	28	26	24
19	57	63	2940	54	42	3030	2130	199	55	27	25	23
20	53	54	1900	52	40	3020	3170	210	50	26	23	22
21	48	51	1080	35	38	4370	3660	287	45	25	22	24
22	44	48	615	33	36	5010	2440	171	40	24	22	22
23	47	46	435	33	35	3880	1100	151	37	48	22	21
24	43	46	367	34	35	2450	643	150	33	35	21	21
25	41	51	887	37	34	1210	476	333	31	28	23	20
26	42	52	680	100	34	1620	342	316	96	27	22	20
27	41	49	434	619	33	3330	293	191	57	26	50	19
28	40	51	264	611	42	3070	236	136	40	24	36	20
29	39	47	221	663	---	2210	220	109	37	23	27	18
30	37	61	165	592	---	1160	187	96	34	23	30	20
31	34	---	125	453	---	864	---	86	---	23	32	---
TOTAL	2690	1415	34241	5920	2493	56221	29115	4719	2373	3217	1841	703
MEAN	86.8	47.2	1105	191	89.0	1814	971	152	79.1	104	59.4	23.4
MAX	367	66	5420	663	322	5600	3660	333	360	805	329	44
MIN	34	34	71	33	33	37	155	83	31	23	21	18
CFSM	.25	.14	3.19	.55	.26	5.24	2.81	.44	.23	.30	.17	.07
IN.	.29	.15	3.68	.64	.27	6.04	3.13	.51	.26	.35	.20	.08

CAL YR 1977 TOTAL 91647.6 MEAN 251 MAX 5420 MIN 8.4 CFSM .73 IN 9.85
WTR YR 1978 TOTAL 144948.0 MEAN 397 MAX 5600 MIN 18 CFSM 1.15 IN 15.58

04189000 BLANCHARD RIVER NEAR FINDLAY, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1968 to current year.
pH: July 1968 to current year.
WATER TEMPERATURES: July 1968 to current year.
DISSOLVED OXYGEN: July 1968 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Dissolved oxygen concentrations listed as 15.0 mg/L represent concentrations of 15.0 mg/L or higher, due to instrument limitations prior to March 29, 1978; 20.0 mg/L limitation thereafter.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,600 micromhos Feb. 11, 12, 1977; minimum, 134 micromhos Jan. 26, 1976.
pH: Maximum, 9.4 units Feb. 21, 1977; minimum, 3.1 units May 13, 1970.
WATER TEMPERATURES: Maximum, 33.0°C Aug. 27, 28, Sept. 5, 1969; minimum, 0.0°C on several days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher on several days during 1972; minimum, 0.0 mg/L June 18, July 2, 3, 1970, Aug. 2, 1975.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 1,480 micromhos Jan. 26; minimum recorded, 151 micromhos Mar. 16.
pH: Maximum recorded, 8.5 units Jan. 2, June 13; minimum recorded, 6.7 units Sept. 10.
WATER TEMPERATURES: Maximum recorded, 30.0°C July 20, 21; minimum recorded, 0.5°C Jan. 20, Feb. 10, Mar. 2, 3, 5, 15-17.
DISSOLVED OXYGEN: Maximum recorded, 14.3 mg/L Mar. 3; minimum recorded, 0.1 mg/L July 23.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	1060	1000	---	---	1090	870	---	---	1100	1030
2	---	---	1060	1030	---	---	1110	1010	---	---	1080	1050
3	---	---	1060	1020	---	---	1050	1010	---	---	1120	1010
4	---	---	1060	1040	---	---	1100	1010	---	---	1210	1070
5	---	---	1090	1040	---	---	1120	1070	---	---	1080	1020
6	---	---	1120	1100	---	---	1170	1100	---	---	1030	1000
7	---	---	1100	1090	---	---	1120	1090	837	817	1060	1020
8	---	---	1140	1020	---	---	---	---	865	822	1040	1010
9	---	---	1050	1010	---	---	---	---	886	843	1130	1030
10	---	---	975	932	---	---	---	---	918	883	1160	1080
11	---	---	972	948	---	---	---	---	930	888	1190	1080
12	---	---	---	---	---	---	---	---	939	906	1170	1110
13	---	---	---	---	1120	1040	810	781	973	916	1120	1010
14	---	---	---	---	1070	337	916	801	1020	930	991	220
15	---	---	---	---	325	280	921	853	1130	945	208	154
16	---	---	---	---	337	292	918	867	999	928	162	151
17	---	---	---	---	399	337	939	888	990	937	193	157
18	---	---	---	---	402	397	979	922	993	942	252	195
19	919	898	---	---	444	400	999	955	982	919	---	---
20	933	909	---	---	516	449	972	937	967	915	271	268
21	951	925	---	---	595	518	1000	970	979	932	265	211
22	993	915	---	---	690	598	1030	976	1000	948	264	211
23	996	936	---	---	747	694	991	975	1000	964	311	265
24	985	937	---	---	858	746	1040	993	999	972	373	313
25	1000	946	---	---	816	534	1400	1040	1070	1010	---	---
26	1000	975	---	---	573	526	1480	1340	1090	1050	---	---
27	1010	924	---	---	672	574	---	---	1060	1010	311	294
28	1020	993	---	---	778	679	---	---	1070	1020	339	309
29	1060	1010	---	---	850	781	---	---	---	---	402	342
30	1080	1010	---	---	882	829	---	---	---	---	459	405
31	1050	1010	---	---	889	852	---	---	---	---	498	462
MONTH	1080	898	1140	932	1120	280	1480	781	1130	817	1210	151

04189000 BLANCHARD RIVER NEAR FINDLAY, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	489	456	775	730	763	730	763	736	856	792	856	768
2	486	447	805	766	774	742	783	505	886	852	894	828
3	507	483	823	772	781	757	625	529	859	678	861	825
4	498	472	805	751	795	757	627	547	834	667	856	799
5	525	453	811	763	795	766	664	628	882	841	855	829
6	549	328	831	772	794	760	688	658	889	852	904	829
7	388	312	808	787	849	751	712	667	865	444	921	895
8	487	391	787	745	837	747	718	690	603	375	927	888
9	582	492	796	723	829	775	738	709	576	447	930	910
10	645	587	831	771	834	792	742	720	579	451	967	904
11	661	646	834	774	832	805	765	735	725	580	909	832
12	672	651	819	766	831	720	772	723	730	676	915	847
13	700	667	807	717	810	518	772	717	742	693	949	691
14	733	679	762	705	589	450	765	715	765	732	798	631
15	748	709	783	751	622	574	768	733	795	725	859	690
16	753	721	781	765	672	595	741	624	826	745	847	765
17	777	744	768	739	705	643	738	684	814	738	849	789
18	790	588	721	667	702	657	768	738	841	777	801	735
19	618	252	725	682	712	682	762	741	843	774	864	813
20	325	289	708	607	769	714	775	748	895	796	859	822
21	325	289	618	576	780	754	795	750	840	801	910	856
22	405	328	714	622	807	775	829	754	886	796	916	769
23	499	409	760	714	807	766	783	604	891	874	928	766
24	580	501	759	725	799	742	682	589	901	885	900	810
25	612	580	741	643	768	726	763	691	932	889	829	786
26	658	613	627	565	748	523	777	760	937	909	916	778
27	700	648	613	559	742	619	794	765	916	612	1000	900
28	738	685	652	616	816	714	825	784	766	625	1060	997
29	747	691	687	649	741	712	843	786	825	774	1010	916
30	738	711	733	682	754	730	825	789	846	814	1070	903
31	---	---	754	725	---	---	820	787	868	691	---	---
MONTH	790	252	834	559	849	450	843	505	937	375	1070	631
YEAR	1480	151										

04189000 BLANCHARD RIVER NEAR FINDLAY, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	8.1	8.1	---	---	8.3	8.1	---	---	7.8	7.6
2	---	---	8.2	8.1	---	---	8.5	8.1	---	---	7.8	7.6
3	---	---	8.2	8.1	---	---	8.2	8.1	---	---	7.8	7.6
4	---	---	8.2	8.0	---	---	8.2	8.1	---	---	7.8	7.6
5	---	---	8.2	7.8	---	---	8.1	8.0	---	---	7.9	7.6
6	---	---	8.0	7.9	---	---	8.0	8.0	---	---	7.8	7.1
7	---	---	8.0	7.9	---	---	8.0	8.0	7.5	7.2	7.8	7.5
8	---	---	8.1	7.6	---	---	---	---	7.5	7.3	7.8	7.2
9	---	---	7.9	7.6	---	---	---	---	7.6	7.5	7.8	7.3
10	---	---	8.0	7.8	---	---	---	---	7.6	7.5	7.8	7.5
11	---	---	8.0	8.0	---	---	---	---	7.6	7.6	7.6	7.3
12	---	---	---	---	---	---	---	---	7.7	7.6	---	---
13	---	---	---	---	7.5	7.2	7.8	7.6	7.7	7.6	---	---
14	---	---	---	---	7.5	7.3	7.9	7.8	7.8	7.5	---	---
15	---	---	---	---	7.5	7.3	8.0	7.8	7.8	7.5	---	---
16	---	---	---	---	7.5	7.0	8.0	7.8	7.5	7.5	---	---
17	---	---	---	---	7.6	7.3	8.1	7.9	7.6	7.5	---	---
18	---	---	---	---	7.6	7.5	8.1	8.0	7.6	7.5	---	---
19	7.9	7.3	---	---	7.7	7.5	8.1	8.0	7.6	7.5	---	---
20	8.0	7.8	---	---	8.1	7.7	8.1	8.0	7.6	7.5	---	---
21	8.0	7.8	---	---	8.3	8.1	8.1	7.9	7.6	7.5	---	---
22	7.9	7.8	---	---	8.3	8.2	8.0	7.5	7.7	7.5	---	---
23	7.9	7.9	---	---	8.4	8.1	8.1	7.9	7.7	7.6	---	---
24	7.9	7.7	---	---	8.3	8.1	8.0	7.9	7.7	7.6	---	---
25	7.9	7.7	---	---	8.3	8.1	8.0	7.9	7.7	7.6	---	---
26	7.8	7.4	---	---	8.3	8.1	8.4	8.1	7.7	7.6	---	---
27	7.9	7.2	---	---	8.1	7.9	---	---	7.7	7.6	---	---
28	8.0	7.4	---	---	8.3	8.1	---	---	7.6	7.5	---	---
29	8.0	7.6	---	---	8.2	8.0	---	---	---	---	---	---
30	8.1	7.8	---	---	8.2	8.0	---	---	---	---	---	---
31	8.1	8.1	---	---	8.1	8.0	---	---	---	---	---	---
MONTH	8.1	7.2	8.2	7.6	8.4	7.0	8.5	7.5	7.8	7.2	7.9	7.1

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	8.4	8.1	---	---	7.5	7.4	7.8	7.4	7.8	7.2
2	---	---	8.4	8.1	---	---	7.6	7.5	7.7	7.5	7.8	7.2
3	---	---	8.4	8.0	---	---	7.9	7.6	7.6	7.3	7.6	7.1
4	---	---	8.2	8.0	---	---	7.8	7.6	7.8	7.4	7.8	7.3
5	---	---	8.1	8.0	---	---	7.8	7.5	7.9	7.5	7.8	7.0
6	---	---	8.1	8.0	---	---	7.8	7.2	7.8	7.6	7.7	7.0
7	---	---	8.1	8.0	---	---	7.7	7.1	7.9	7.5	7.5	6.9
8	---	---	8.3	7.9	7.9	7.7	7.6	7.3	8.1	7.3	7.5	6.8
9	---	---	8.3	7.8	8.2	7.8	7.7	7.4	7.6	7.2	7.4	6.8
10	8.0	7.5	7.9	7.7	8.1	7.7	8.1	7.7	7.8	7.4	7.5	6.7
11	8.2	7.5	7.8	7.6	8.0	7.6	8.2	7.9	7.8	7.4	7.4	7.0
12	8.0	7.8	7.8	7.5	7.9	7.6	8.1	7.8	7.6	7.3	7.7	7.3
13	8.0	7.8	8.4	7.5	8.5	7.8	7.7	7.3	7.7	7.2	7.7	7.3
14	---	---	7.9	7.5	7.9	7.0	7.5	7.3	7.8	7.4	7.5	7.3
15	---	---	8.0	7.6	7.9	7.4	7.6	7.1	7.7	7.4	7.6	7.3
16	---	---	---	---	7.7	7.2	7.5	7.3	7.7	7.3	7.5	7.1
17	---	---	---	---	7.5	7.2	7.7	7.2	7.7	7.3	---	---
18	---	---	---	---	7.6	7.3	7.7	7.3	7.7	7.2	---	---
19	8.0	7.7	---	---	7.7	7.1	7.6	7.4	7.6	7.3	---	---
20	8.0	7.8	---	---	7.7	7.0	7.4	6.8	7.8	7.4	---	---
21	8.1	8.0	---	---	7.7	7.4	7.3	7.2	7.9	7.2	---	---
22	8.1	7.8	---	---	7.9	7.0	7.2	7.0	7.8	7.1	7.7	7.5
23	8.1	8.0	---	---	7.9	7.0	7.4	7.2	7.6	7.5	7.7	7.2
24	8.2	8.0	---	---	7.8	7.1	7.3	7.2	7.3	7.0	7.8	7.3
25	8.3	8.0	---	---	7.4	7.0	---	---	7.5	7.3	7.8	7.4
26	8.2	8.0	---	---	7.6	7.1	7.4	7.0	7.6	7.1	7.8	7.4
27	8.3	7.9	---	---	7.4	7.2	7.5	7.1	7.5	7.2	7.8	7.2
28	8.2	7.8	---	---	7.6	7.2	7.6	7.4	7.5	7.1	7.7	7.3
29	8.1	7.7	---	---	7.6	7.2	7.6	7.3	7.6	7.2	7.9	7.3
30	8.2	8.0	---	---	7.6	7.3	7.5	7.4	7.6	7.5	7.6	7.3
31	---	---	---	---	---	---	7.6	7.4	7.7	7.3	---	---
MONTH	8.3	7.5	8.4	7.5	8.5	7.0	8.2	6.8	8.1	7.0	7.9	6.7
YEAR	8.5	6.7										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04189000 BLANCHARD RIVER NEAR FINDLAY, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	14.5	13.0	---	---	2.5	2.0	---	---	4.0	1.5
2	---	---	15.0	13.0	---	---	2.0	1.0	---	---	3.5	.5
3	---	---	16.0	14.5	---	---	2.5	1.0	---	---	3.5	.5
4	---	---	16.0	14.0	---	---	3.5	1.5	---	---	3.5	1.0
5	---	---	15.0	14.0	---	---	4.5	3.0	---	---	3.0	.5
6	---	---	16.0	14.5	---	---	4.5	4.0	---	---	4.5	1.5
7	---	---	15.5	15.5	---	---	4.5	4.0	1.5	1.0	4.0	1.5
8	---	---	16.0	15.5	---	---	---	---	2.0	1.0	3.5	1.0
9	---	---	16.5	15.0	---	---	---	---	2.0	1.0	5.0	1.0
10	---	---	14.5	9.5	---	---	---	---	2.0	.5	5.5	1.5
11	---	---	9.5	8.5	---	---	---	---	2.5	1.0	5.0	2.0
12	---	---	---	---	---	---	---	---	3.0	1.0	4.5	2.5
13	---	---	---	---	4.0	3.5	2.0	1.5	2.0	1.0	4.0	2.0
14	---	---	---	---	3.0	1.0	2.0	1.0	2.5	1.0	2.5	1.0
15	---	---	---	---	1.0	1.0	2.0	1.0	3.0	1.0	1.0	.5
16	---	---	---	---	2.0	1.0	2.0	1.0	3.0	1.5	1.0	.5
17	---	---	---	---	3.5	2.0	1.5	1.0	2.5	1.0	1.5	.5
18	---	---	---	---	5.0	4.0	2.5	1.0	3.0	1.0	2.0	1.0
19	---	---	---	---	5.5	5.0	2.5	1.0	2.5	1.0	---	---
20	---	---	---	---	5.0	4.0	1.5	.5	3.0	1.0	1.5	1.0
21	---	---	---	---	4.0	2.5	2.0	1.0	2.5	1.0	2.0	1.5
22	---	---	---	---	2.5	2.0	1.5	1.0	2.5	1.0	4.0	1.5
23	---	---	---	---	3.0	2.0	2.5	1.0	3.0	1.0	4.5	4.0
24	---	---	---	---	4.5	3.0	3.5	1.5	3.5	1.5	4.5	3.0
25	---	---	---	---	4.0	1.0	3.5	3.0	3.5	2.5	---	---
26	---	---	---	---	1.0	1.0	3.0	.5	3.5	2.0	---	---
27	14.5	14.0	---	---	1.5	1.0	---	---	4.0	1.0	2.5	2.0
28	14.5	13.0	---	---	2.0	1.0	---	---	5.0	1.5	4.5	2.0
29	14.0	13.0	---	---	2.5	1.5	---	---	---	---	6.0	4.5
30	14.0	12.5	---	---	3.0	2.0	---	---	---	---	5.5	4.5
31	13.5	12.0	---	---	3.0	2.0	---	---	---	---	8.5	5.5
MONTH	14.5	12.0	16.5	8.5	5.5	1.0	4.5	.5	5.0	.5	8.5	.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.0	8.5	15.0	11.5	27.0	22.0	26.0	23.0	26.5	22.5	24.5	20.5
2	10.0	6.0	15.5	12.0	24.5	22.5	23.0	20.5	25.5	24.0	25.0	21.0
3	7.5	5.5	16.0	12.5	24.5	20.5	20.5	18.5	26.5	23.0	25.5	22.5
4	9.0	7.5	13.5	11.5	24.5	19.5	19.5	18.5	24.5	21.0	24.5	21.5
5	9.5	8.0	12.0	11.0	25.0	19.5	20.5	18.5	24.0	21.0	25.5	21.0
6	9.5	8.0	12.0	11.0	25.5	19.5	23.0	19.5	25.5	22.5	26.5	22.5
7	10.5	8.0	13.5	10.5	24.0	21.0	25.5	21.5	24.5	21.5	27.0	23.0
8	10.5	9.0	14.0	11.5	24.5	21.0	27.0	22.5	22.0	20.5	27.5	23.5
9	9.0	7.5	15.0	12.5	24.5	19.5	26.5	22.5	24.5	21.0	26.0	24.0
10	11.0	7.0	16.0	12.5	25.0	19.0	25.5	23.5	23.5	21.5	27.5	23.0
11	12.0	10.5	17.0	13.0	25.5	20.5	25.5	20.5	24.0	21.5	26.5	24.0
12	11.5	9.5	16.0	15.0	24.0	21.0	26.0	20.5	25.0	21.5	25.0	22.5
13	11.5	10.0	16.5	15.0	20.5	18.0	25.5	21.5	27.5	22.0	22.5	20.5
14	10.5	9.0	15.5	14.0	18.5	16.5	26.0	22.5	26.5	23.0	23.0	21.5
15	11.5	9.0	14.0	13.5	20.0	17.0	27.5	22.5	27.0	23.5	23.5	20.5
16	11.5	9.0	15.0	13.0	21.0	18.0	27.0	21.5	27.5	24.0	24.0	21.5
17	12.5	9.0	17.5	14.0	23.5	20.0	27.0	21.5	27.0	22.5	25.0	22.5
18	10.5	9.5	19.5	15.5	25.0	21.0	26.5	22.5	27.5	23.5	25.5	24.0
19	9.5	8.0	22.0	18.0	27.0	21.0	28.0	23.5	27.0	24.5	26.5	24.0
20	9.5	7.0	22.0	20.0	26.5	22.0	30.0	25.0	25.0	21.0	27.5	25.0
21	7.0	6.5	20.0	16.5	26.0	23.0	30.0	26.5	25.0	21.0	26.0	24.0
22	9.0	6.0	17.5	15.0	26.0	20.0	29.5	26.5	26.0	22.0	24.0	20.0
23	8.5	8.0	16.5	16.0	27.0	21.0	28.0	24.5	25.0	24.5	21.0	19.0
24	10.5	7.5	18.0	16.0	27.0	22.0	24.5	23.5	27.0	26.0	21.5	18.5
25	10.5	9.5	20.0	16.5	25.5	22.5	27.5	23.0	26.5	24.5	20.0	18.5
26	11.5	9.0	21.5	18.5	24.5	21.5	29.5	25.0	25.5	22.5	19.5	17.5
27	13.0	10.5	24.0	20.5	28.0	22.0	27.5	25.0	26.0	23.5	20.0	17.5
28	15.0	11.5	25.5	21.5	29.0	23.0	26.5	22.5	26.0	22.5	18.5	17.0
29	16.0	12.5	26.0	22.5	29.5	24.0	25.0	24.0	25.0	22.5	18.5	15.0
30	15.5	13.0	26.0	23.0	28.0	25.0	23.5	21.5	24.0	21.0	18.5	16.5
31	---	---	26.5	22.5	---	---	25.0	20.5	23.0	19.5	---	---
MONTH	16.0	5.5	26.5	10.5	29.5	16.5	30.0	18.5	27.5	19.5	27.5	15.0
YEAR	30.0	.5										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04189000 BLANCHARD RIVER NEAR FINDLAY, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	4.0	3.4	---	---	10.6	9.1	---	---	14.1	9.6
2	---	---	4.7	3.7	---	---	10.1	8.1	---	---	13.9	9.9
3	---	---	4.0	3.3	---	---	9.0	7.6	---	---	14.3	10.2
4	---	---	4.0	3.0	---	---	9.4	8.4	---	---	13.6	9.8
5	---	---	4.1	3.1	---	---	9.0	8.2	---	---	13.6	9.3
6	---	---	3.1	2.2	---	---	8.9	7.5	---	---	13.3	8.8
7	---	---	2.9	2.6	---	---	8.2	7.3	12.6	11.7	13.2	8.3
8	---	---	3.8	2.8	---	---	---	---	12.6	11.3	14.0	9.8
9	---	---	5.0	3.4	---	---	---	---	12.5	11.2	12.2	9.1
10	---	---	5.9	2.7	---	---	---	---	12.3	11.0	12.6	8.0
11	---	---	6.3	5.9	---	---	---	---	12.5	10.8	12.6	8.4
12	---	---	---	---	---	---	---	---	12.8	10.9	10.9	8.6
13	---	---	---	---	---	---	11.4	11.1	12.7	10.9	11.8	9.1
14	---	---	---	---	---	---	11.5	10.7	12.8	10.9	11.8	9.7
15	---	---	---	---	---	---	11.5	10.5	13.0	10.3	11.6	11.2
16	---	---	---	---	---	---	11.4	10.2	13.1	10.5	13.7	9.5
17	---	---	---	---	---	---	11.5	10.4	13.1	10.1	11.0	8.7
18	---	---	---	---	---	---	10.8	9.9	13.2	10.3	---	---
19	7.5	6.4	---	---	---	---	10.8	9.6	13.3	10.2	10.2	8.3
20	6.9	6.1	---	---	---	---	11.1	9.6	13.6	10.2	12.1	10.9
21	6.5	5.8	---	---	11.1	10.3	10.1	9.0	13.3	9.8	11.2	9.4
22	6.5	5.3	---	---	11.3	10.7	10.0	8.8	13.0	9.7	10.5	10.0
23	5.9	4.8	---	---	10.9	10.5	10.1	9.0	13.3	9.9	9.9	9.2
24	5.7	4.5	---	---	10.5	8.7	10.0	8.5	13.5	9.6	11.1	9.5
25	5.3	4.1	---	---	11.1	9.4	9.6	7.7	13.8	9.4	---	---
26	4.5	3.5	---	---	11.3	11.0	9.5	9.1	14.1	9.5	---	---
27	4.0	3.7	---	---	11.0	10.8	---	---	13.5	9.9	12.1	11.2
28	4.2	3.7	---	---	10.7	10.4	---	---	13.5	9.7	12.0	11.6
29	4.1	3.5	---	---	10.6	10.1	---	---	---	---	11.5	11.2
30	3.7	3.0	---	---	10.4	9.8	---	---	---	---	12.0	11.4
31	3.8	2.9	---	---	10.7	9.9	---	---	---	---	11.9	10.8
MONTH	7.5	2.9	6.3	2.2	11.3	8.7	11.5	7.3	14.1	9.4	14.3	8.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.1	10.4	9.2	7.4	8.3	4.8	3.3	2.2	4.2	2.1	3.0	2.0
2	10.8	10.4	8.7	7.3	7.7	4.1	5.0	2.5	3.4	1.8	3.3	2.0
3	11.3	10.7	9.2	7.4	10.8	4.3	8.4	5.2	4.8	1.8	3.5	1.8
4	11.3	10.4	10.1	7.6	11.5	4.8	8.6	8.3	3.4	1.3	3.4	1.9
5	11.1	10.6	9.6	8.6	10.4	5.0	8.5	7.6	4.0	1.9	3.6	2.2
6	10.9	10.1	10.9	8.7	8.3	5.4	7.7	6.2	9.3	2.7	3.4	1.9
7	10.1	9.9	11.3	9.4	7.6	4.5	6.2	5.1	5.9	3.4	3.6	1.8
8	10.8	10.0	10.6	7.3	5.4	3.7	6.1	4.9	7.2	5.8	4.0	1.6
9	11.0	10.8	9.7	7.0	7.2	4.2	7.9	4.4	5.7	4.4	2.4	1.4
10	11.1	9.9	10.7	7.7	8.1	4.2	9.3	4.4	6.2	5.1	2.9	1.3
11	9.9	9.4	11.1	7.8	5.6	3.9	11.2	4.8	5.5	4.7	3.0	1.2
12	10.5	9.7	8.6	7.4	6.6	3.7	11.9	5.4	4.5	3.9	1.8	1.2
13	10.0	9.5	8.5	7.0	8.3	3.6	7.2	5.1	6.0	3.4	3.5	1.3
14	10.7	9.9	9.7	7.3	8.2	7.6	6.1	4.1	5.5	3.4	2.4	1.3
15	10.9	9.5	9.9	8.1	7.6	6.2	5.3	4.5	5.3	2.1	2.5	1.3
16	10.8	9.5	9.8	8.1	6.2	5.2	6.4	2.6	5.5	2.7	2.4	1.5
17	10.8	9.3	9.5	7.1	5.3	4.6	4.3	3.6	4.2	2.8	2.6	1.5
18	10.3	9.0	8.5	6.6	5.2	4.0	5.0	3.1	4.2	2.7	2.4	1.6
19	10.8	9.5	9.9	6.9	6.0	3.8	5.5	3.1	4.1	2.6	2.5	1.5
20	9.8	8.5	9.3	6.3	5.0	3.9	5.1	2.8	4.4	2.3	2.8	1.5
21	9.0	8.4	7.8	6.7	5.5	3.4	4.4	2.3	4.1	2.5	3.7	1.4
22	9.4	8.9	8.6	7.0	5.8	3.9	4.1	1.9	3.8	2.1	3.3	2.2
23	9.7	9.2	8.0	7.0	8.2	4.6	4.6	.1	1.9	1.8	3.4	1.9
24	9.6	8.7	8.5	5.7	6.9	5.3	2.3	.2	4.4	2.3	4.8	2.9
25	9.3	8.5	9.9	7.8	7.6	5.9	3.5	1.6	2.1	1.4	4.2	2.4
26	9.5	8.3	8.0	6.5	7.0	3.8	4.1	1.6	2.7	1.5	4.4	2.5
27	9.3	7.9	6.7	5.6	6.3	4.0	4.1	1.8	4.4	1.4	4.4	2.7
28	8.4	7.3	7.0	5.2	5.8	3.2	4.7	2.3	2.1	.5	3.8	2.6
29	8.6	7.5	7.1	5.2	5.0	3.7	4.2	2.2	2.5	1.2	4.5	3.3
30	8.7	7.4	7.4	5.0	4.8	3.3	3.5	2.1	2.7	1.5	4.4	3.0
31	---	---	7.7	4.8	---	---	4.6	2.2	2.8	1.7	---	---
MONTH	11.3	7.3	11.3	4.8	11.5	3.2	11.9	.1	9.3	.5	4.8	1.2
YEAR	14.3	.1										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04191500 AUGLAIZE RIVER NEAR DEFIANCE, OH

LOCATION.--Lat 41°14'15", long 84°23'57", in NE 1/4 sec. 9, T.3 N., R.4 E., Defiance County, Hydrologic Unit 04100007, on right bank 125 ft (38 m) downstream from dam of Toledo Edison Co., 0.2 mi (0.3 km) upstream from Jackson ditch, and 3 mi (5 km) south of Defiance.

DRAINAGE AREA.--2,318 mi^2 (6,004 km^2).

PERIOD OF RECORD.--May to August 1903 (gage heights only), April 1915 to current year. Monthly discharge only for some periods, published in WSP 1307.

REVISED RECORDS.--WSP 954: 1941. WSP 1912: Drainage area. WDR OH-72-1: 1966(M).

GAGE.--Water-stage recorder. Datum of gage is 659.70 ft (201.077 m) National Geodetic Vertical Datum of 1929. May 20 to Aug. 8, 1903, nonrecording gage at site 1.8 mi (2.9 km) downstream at different datum. April 13, 1915, to Dec. 6, 1933, nonrecording gage near right bank on upstream side of dam at datum 6.00 ft (1.829 m) higher, and auxiliary tailwater staff gage near right bank on downstream side of dam at present datum.

REMARKS.--Records good except those for winter periods, which are fair. Flow regulated by dam at former powerplant 125 ft (38 m) upstream from station; reservoir capacity, 9,800 acre-ft (12.1 hm^3), operation of plant discontinued Jan. 10, 1963; occasional gate operation subsequently. Some diversion by Miami and Erie Canal from Grand Lake into Jennings Creek, tributary to Auglaize River 70 mi (113 km) upstream from station. Water-quality data collected at this site 1966 to 1977.

AVERAGE DISCHARGE.--63 years, 1,705 ft^3/s (48.29 m^3/s).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 52,500 ft^3/s (1,490 m^3/s) Feb. 16, 1950, Feb. 12, 1959, gage height, 26.4 ft (8.05 m), from graph based on hourly powerplant tailwater-gage readings, respectively; maximum gage height, 27.65 ft (8.428 m) Feb. 13, 1959, from flood mark (ice jam); minimum daily discharge, 0.5 ft^3/s (0.014 m^3/s) Oct. 13, 14, 1952, during repairs to powerplant dam.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 38.8 ft (11.83 m), from reading on powerplant tailwater gage at present datum; discharge, 120,000 ft^3/s (3,400 m^3/s), from rating curve extended above 51,000 ft^3/s (1,440 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 40,200 ft^3/s (1138 m^3/s) Mar. 22, gage height, 23.74 ft (7.236 m); minimum daily, 13 ft^3/s (0.37 m^3/s) Jan. 8, result of gate operations.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	251	224	1530	3670	470	635	6550	367	516	192	77	123
2	256	236	3310	3660	470	1190	4890	43	441	187	80	130
3	325	236	3520	3660	470	762	4020	52	393	722	64	116
4	331	230	3020	3660	470	406	4510	308	361	2290	60	99
5	314	224	2160	3660	470	361	4840	548	320	2430	67	90
6	276	224	1340	663	470	355	6820	548	308	1660	74	90
7	251	219	805	14	470	343	16000	524	308	1010	109	77
8	281	213	565	13	470	320	20400	500	308	635	177	72
9	308	230	556	14	470	287	13600	492	367	470	266	58
10	508	281	485	325	470	276	7140	485	367	349	337	62
11	752	287	434	470	470	251	2960	508	349	287	393	64
12	794	292	470	470	470	219	2840	485	292	251	448	52
13	626	297	508	470	470	219	2640	516	261	213	374	60
14	470	281	2100	470	470	477	1880	712	308	182	271	82
15	355	276	10500	470	470	4810	1340	1180	516	168	208	106
16	314	251	18700	470	470	15100	1020	1340	682	142	182	119
17	308	320	26300	470	470	25800	849	1200	556	150	119	163
18	276	337	30300	470	470	31600	762	997	386	159	119	146
19	247	314	31000	470	470	31800	1220	919	308	146	109	112
20	242	308	28100	470	470	27900	4880	1020	271	130	98	112
21	230	297	19300	470	470	31500	12700	1320	224	123	90	90
22	197	303	9830	470	470	38700	14800	1590	202	123	90	74
23	208	303	4790	470	470	38400	11400	1440	187	93	109	80
24	213	287	3290	470	287	32200	6350	1210	177	90	77	77
25	197	287	3550	470	287	21900	3850	1540	172	99	69	64
26	192	287	3660	470	276	13900	2830	2100	187	112	69	67
27	197	292	3660	470	276	15800	2190	1580	172	96	77	77
28	187	271	3660	470	276	19300	1560	1140	187	88	102	54
29	187	256	3660	470	---	19900	1190	885	224	96	85	56
30	187	271	3660	470	---	15800	979	702	219	67	112	60
31	192	---	3670	470	---	10400	---	573	---	74	116	---
TOTAL	9672	8134	228433	29209	12212	400911	167010	26824	9569	12834	4620	2632
MEAN	312	271	7369	942	436	12930	5567	865	319	414	149	87.7
MAX	794	337	31000	3670	470	38700	20400	2100	682	2430	448	163
MIN	187	213	434	13	276	219	762	43	172	67	60	52

CAL YR 1977 TOTAL 628344 MEAN 1721 MAX 31000 MIN 45
WTR YR 1978 TOTAL 912060 MEAN 2499 MAX 38700 MIN 13

04193490 MAUMEE RIVER NEAR WATERVILLE, OH

LOCATION.--Lat 41°28'34", long 83°44'20", Lucas County, Hydrologic Unit 04100009, in Bowling Green water-treatment plant, 2.0 mi (3.2 km) upstream from discharge station at Waterville.

DRAINAGE AREA.--6,313 mi^2 (16,351 km^2).

PERIOD OF RECORD.--Water years 1950 to 1976 (published as Maumee River at Waterville). 1976 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1963 to current year.
pH: May 1963 to current year.
WATER TEMPERATURES: March 1950 to current year.
DISSOLVED OXYGEN: May 1963 to current year.

INSTRUMENTATION.--Water-quality monitor since May 1963. Prior to June 1974 water-quality monitor located in water-treatment plant 2,500 ft (762 m) upstream from discharge station. Prior to May 1963 alcohol-actuated thermograph located at discharge station.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Dissolved oxygen concentrations listed as 15.0 mg/L represent concentrations of 15.0 mg/L or higher due to instrument limitations prior to March 29, 1978; 20.0 mg/L limitation thereafter. See records of daily discharge for gaging station at Waterville (04193500).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,260 micromhos Feb. 16, 1977; minimum, 213 micromhos Jan. 30, 1952.
pH: Maximum, 11.4 units Jan. 16, 1965; minimum, 5.0 units Nov. 24, 1968.
WATER TEMPERATURES: Maximum, 34.0°C July 1, 1963; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 18.0 mg/L July 18, 1978; minimum, 0.3 mg/L Nov. 10, 1965.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,040 micromhos Mar. 12; minimum, 234 micromhos Mar. 18, 19, 21, 22.
pH: Maximum, 9.7 units July 30; minimum, 6.6 units July 20.
WATER TEMPERATURES: Maximum, 30.5°C July 21; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum recorded, 18.0 mg/L July 18; minimum recorded, 2.3 mg/L June 30.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	531	519	---	---	789	723	621	615	840	837	888	876
2	537	528	---	---	744	687	648	624	846	840	897	885
3	546	534	---	---	693	618	663	651	846	840	906	897
4	562	546	---	---	651	600	684	663	855	843	906	906
5	591	585	---	---	606	576	690	681	861	855	915	906
6	600	591	---	---	597	582	702	690	867	861	927	915
7	600	591	---	---	639	600	726	702	873	867	933	924
8	609	588	810	777	666	639	723	681	888	870	939	930
9	648	609	786	774	681	660	720	681	897	885	954	939
10	690	591	792	777	696	678	765	720	912	897	984	954
11	660	582	795	786	696	687	774	765	912	909	1020	987
12	669	645	801	795	693	690	783	774	921	909	1040	1020
13	675	660	801	798	699	693	786	771	948	924	1040	1020
14	678	666	798	780	702	567	771	765	957	951	1020	660
15	684	663	780	765	618	537	783	771	948	918	660	489
16	690	657	774	762	546	468	801	780	918	906	591	330
17	678	651	771	762	465	417	813	786	906	888	330	255
18	657	648	792	768	420	396	843	807	888	876	252	234
19	669	660	819	795	393	375	855	837	873	870	240	234
20	699	666	813	801	387	378	864	849	870	867	252	237
21	726	696	816	801	405	387	861	843	876	870	240	234
22	729	711	828	819	429	405	843	837	873	870	243	234
23	732	720	825	822	459	429	867	843	867	864	270	246
24	---	---	825	819	492	459	882	867	867	864	288	270
25	---	---	831	819	498	480	888	870	870	864	---	---
26	---	---	819	810	534	489	888	870	867	864	339	318
27	---	---	819	810	561	537	---	---	873	864	345	333
28	---	---	822	807	588	561	879	861	882	867	351	345
29	---	---	810	798	606	585	870	858	---	---	363	351
30	---	---	798	786	615	609	861	846	---	---	372	363
31	---	---	---	---	618	615	846	840	---	---	408	384
MONTH	732	519	831	762	789	375	888	615	957	837	1040	234

04193490 MAUMEE RIVER NEAR WATERVILLE, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	411	408	615	600	657	645	723	693	501	480	627	621
2	423	411	621	600	666	654	696	621	498	489	630	624
3	474	423	612	594	678	633	633	576	510	468	633	624
4	477	471	591	573	657	621	594	573	510	471	639	633
5	483	474	615	576	636	615	597	561	510	489	645	639
6	489	453	606	585	645	609	606	579	492	468	648	642
7	453	378	588	579	630	600	624	606	480	465	651	645
8	375	369	606	582	639	597	612	588	474	465	654	651
9	384	369	627	588	672	630	615	606	489	465	666	654
10	408	387	612	597	678	669	612	600	567	477	666	657
11	423	411	633	609	696	672	603	528	---	---	666	660
12	---	---	630	612	699	633	594	579	537	510	669	651
13	483	465	630	615	699	687	594	534	537	510	666	651
14	519	483	645	621	708	693	588	573	558	513	654	645
15	537	516	660	633	708	696	582	564	534	522	654	645
16	549	537	672	651	714	675	579	540	567	525	654	648
17	561	543	678	660	714	699	570	528	567	537	657	651
18	576	546	678	657	714	702	525	498	552	534	660	651
19	612	555	666	630	720	702	516	489	558	540	666	660
20	612	579	636	621	723	702	507	492	564	546	672	663
21	591	492	639	615	717	693	534	495	585	564	678	669
22	489	450	630	606	720	705	546	519	591	582	687	678
23	453	432	639	624	735	711	537	450	597	543	693	678
24	477	450	645	621	729	705	564	432	603	555	681	669
25	504	477	642	621	696	657	567	519	567	552	678	675
26	528	504	633	612	669	528	546	516	---	---	681	672
27	558	528	624	606	537	495	534	504	---	---	675	672
28	576	555	630	615	609	534	522	486	579	564	678	669
29	597	576	630	612	645	612	507	480	588	582	675	666
30	612	594	630	606	690	639	510	489	606	588	675	669
31	---	---	651	618	---	---	513	480	627	606	---	---
MONTH	612	369	678	573	735	495	723	432	627	465	693	621
YEAR	1040	234										

04193490 MAUMEE RIVER NEAR WATERVILLE, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.9	7.8	---	---	---	---	7.8	7.7	7.5	7.4	7.6	7.5
2	8.1	7.9	---	---	---	---	7.8	7.7	7.5	7.4	7.6	7.6
3	8.2	8.0	---	---	---	---	7.8	7.7	7.4	7.4	7.6	7.5
4	8.2	8.0	---	---	---	---	7.8	7.7	7.4	7.4	7.6	7.6
5	8.1	8.0	---	---	---	---	7.8	7.7	7.5	7.4	7.6	7.6
6	8.1	8.0	---	---	---	---	7.8	7.7	7.4	7.4	7.6	7.6
7	8.1	8.0	---	---	---	---	7.9	7.8	7.5	7.4	7.6	7.6
8	8.1	8.0	8.4	7.6	---	---	7.9	7.8	7.5	7.5	7.6	7.6
9	8.1	8.0	8.0	7.8	---	---	8.0	7.7	7.6	7.5	7.6	7.6
10	8.0	7.8	7.9	7.8	---	---	8.2	7.8	7.5	7.5	7.7	7.6
11	8.0	7.8	7.8	7.8	---	---	8.1	7.8	7.5	7.5	7.6	7.6
12	8.1	7.9	7.9	7.8	---	---	8.0	7.8	7.5	7.5	7.7	7.6
13	8.1	8.0	8.0	7.8	---	---	8.0	7.6	7.5	7.5	7.6	7.6
14	8.2	8.0	8.0	7.7	---	---	7.6	7.6	7.5	7.5	7.6	7.5
15	8.2	8.0	7.9	7.6	7.5	7.4	7.8	7.6	7.5	7.5	7.6	7.5
16	8.3	8.1	7.7	7.6	7.5	7.4	7.7	7.6	7.5	7.5	7.5	7.5
17	8.3	8.0	7.7	7.6	7.6	7.4	7.6	7.5	7.5	7.5	7.5	7.4
18	8.1	8.0	7.8	7.6	7.7	7.5	7.6	7.5	7.5	7.5	7.4	7.4
19	8.2	8.1	7.8	7.7	7.8	7.7	7.6	7.5	7.5	7.5	7.5	7.4
20	8.4	8.1	7.9	7.7	7.9	7.8	7.6	7.5	7.5	7.5	7.5	7.5
21	8.7	8.3	7.8	7.6	7.8	7.8	7.5	7.5	7.5	7.5	7.6	7.5
22	8.7	8.4	7.8	7.7	7.8	7.7	7.5	7.5	7.5	7.5	7.6	7.6
23	8.4	8.4	7.8	7.7	7.8	7.7	7.6	7.5	7.5	7.5	7.6	7.5
24	---	---	7.8	7.7	7.9	7.7	7.5	7.5	7.5	7.5	7.6	7.5
25	---	---	7.9	7.7	7.8	7.6	7.6	7.5	7.5	7.5	---	---
26	---	---	8.1	7.9	7.9	7.6	7.5	7.5	7.5	7.5	7.5	7.5
27	---	---	8.1	8.0	8.0	7.8	---	---	7.6	7.5	7.5	7.5
28	---	---	8.1	7.8	8.0	7.9	7.4	7.3	7.6	7.6	7.6	7.5
29	---	---	---	---	8.1	7.7	7.6	7.4	---	---	7.6	7.6
30	---	---	---	---	7.8	7.7	7.5	7.4	---	---	7.6	7.6
31	---	---	---	---	7.7	7.7	7.5	7.4	---	---	7.6	7.6
MONTH	8.7	7.8	8.4	7.6	8.1	7.4	8.2	7.3	7.6	7.4	7.7	7.4

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.7	7.6	8.5	8.0	---	---	8.1	7.9	9.2	8.2	9.2	8.7
2	7.8	7.7	8.8	8.4	---	---	8.0	7.8	9.0	8.6	9.3	8.9
3	7.8	7.7	8.9	8.7	---	---	7.9	7.8	9.3	8.6	9.3	8.9
4	7.7	7.7	8.8	8.6	---	---	8.0	7.8	9.3	8.5	9.2	8.9
5	7.7	7.7	8.8	8.6	---	---	8.0	7.9	8.9	8.3	9.1	8.8
6	7.8	7.6	9.0	8.7	---	---	7.9	7.8	9.0	8.3	9.2	8.7
7	7.6	7.6	8.9	8.7	---	---	8.0	7.8	8.9	7.8	9.2	8.8
8	7.6	7.6	8.8	8.6	8.2	8.0	8.0	7.9	9.3	8.2	9.1	8.7
9	7.7	7.6	8.9	8.7	8.2	8.0	8.1	7.9	9.4	8.6	9.0	8.6
10	7.7	7.7	8.9	8.6	8.5	8.0	8.3	7.8	9.0	8.5	9.1	8.6
11	7.7	7.7	8.7	8.6	8.2	7.8	8.5	7.9	---	---	9.1	8.8
12	---	---	8.6	8.4	8.4	7.9	8.5	8.2	9.1	8.8	8.9	8.7
13	7.9	7.8	8.6	8.5	8.1	7.8	8.5	8.1	9.1	8.8	8.6	8.4
14	7.9	7.8	8.6	8.4	8.4	7.8	8.5	8.2	9.0	8.8	8.8	8.4
15	7.9	7.9	8.5	8.3	8.4	7.7	8.9	8.3	9.3	8.8	9.0	8.4
16	8.0	7.8	8.6	8.2	8.4	7.8	8.9	8.6	9.3	8.8	9.0	8.7
17	8.0	7.9	8.6	8.3	8.5	8.1	8.9	8.6	9.4	9.0	9.0	8.8
18	8.0	7.9	---	---	8.7	8.2	9.0	8.6	9.4	8.9	8.9	8.8
19	8.0	7.9	---	---	8.7	7.9	9.1	8.7	9.2	8.9	8.9	8.7
20	8.0	7.9	8.4	8.1	8.7	7.7	8.9	6.6	9.4	8.8	9.1	8.6
21	7.9	7.7	8.4	8.0	8.6	7.9	8.8	8.4	9.2	8.8	9.0	8.8
22	7.7	7.7	8.4	8.0	8.5	7.9	8.9	8.0	9.2	9.0	9.0	8.8
23	7.8	7.7	8.3	8.0	8.4	7.9	8.7	8.2	9.3	9.0	9.0	8.8
24	7.8	7.7	---	---	8.5	8.1	8.7	8.0	9.2	8.9	9.2	8.9
25	7.9	7.8	---	---	8.6	8.0	8.8	8.2	9.2	8.7	9.1	8.9
26	8.0	7.8	---	---	8.5	7.8	9.0	8.3	---	---	9.2	9.0
27	7.9	7.7	---	---	7.7	7.6	9.1	8.2	---	---	9.1	9.0
28	7.9	7.6	---	---	7.8	7.6	8.9	8.3	8.9	8.4	9.1	9.0
29	8.1	7.9	---	---	7.9	7.7	9.1	8.0	9.1	8.7	9.2	9.0
30	8.3	8.0	---	---	8.1	7.8	9.7	8.5	8.9	8.4	9.1	8.9
31	---	---	---	---	---	---	9.1	8.7	8.9	8.4	---	---
MONTH	8.3	7.6	9.0	8.0	8.7	7.6	9.7	6.6	9.4	7.8	9.3	8.4
YEAR	9.7	6.6										

04193490 MAUMEE RIVER NEAR WATERVILLE, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	18.5	17.5	---	---	3.5	1.0	1.0	.0	.0	.0	.5	.0
2	17.5	16.0	---	---	3.5	3.0	1.0	.0	.0	.0	.5	.0
3	16.5	15.0	---	---	2.5	2.5	1.0	.5	.0	.0	.5	.0
4	16.5	14.5	---	---	2.5	1.5	1.0	.0	.0	.0	.5	.0
5	16.0	15.0	---	---	1.5	.5	.0	.0	.0	.0	.5	.0
6	16.0	14.5	---	---	.5	.0	.0	.0	.0	.0	.5	.0
7	15.5	14.5	---	---	.0	.0	.5	.0	.5	.0	.0	.0
8	14.5	14.5	---	---	.0	.0	.5	.5	.5	.5	.0	.0
9	14.5	12.5	14.5	14.0	.5	.0	.5	.5	.5	.0	.0	.0
10	13.0	11.5	14.5	10.0	.5	.0	1.0	.0	.5	.0	.0	.0
11	13.0	11.5	10.0	6.5	.5	.0	.5	.0	.5	.5	.0	.0
12	11.5	10.5	6.5	6.0	.5	.0	1.0	.0	.5	.0	.5	.0
13	11.0	10.0	6.0	5.5	.0	.0	1.5	.0	.5	.0	.0	.0
14	12.0	10.0	5.5	5.0	.0	.0	.0	.0	.5	.0	.5	.0
15	11.5	11.0	6.0	5.0	.5	.0	.5	.0	.5	.0	.5	.5
16	11.0	9.5	7.5	6.0	.5	.0	.5	.0	.5	.0	.5	.5
17	9.5	8.5	7.5	7.0	1.0	.0	.5	.0	.5	.0	.5	.5
18	9.5	8.5	7.0	5.0	2.0	1.0	.5	.0	.5	.0	.5	.5
19	10.5	9.5	5.0	4.5	3.0	2.0	.5	.0	.5	.0	.5	.5
20	11.5	10.5	6.0	5.0	3.5	3.0	.5	.0	.5	.0	.5	.5
21	12.0	10.5	7.0	6.5	3.0	2.0	.5	.0	.5	.0	1.0	.5
22	12.5	11.5	6.5	5.0	1.5	1.0	.5	.5	.5	.0	1.5	1.0
23	12.0	12.0	5.0	4.5	1.0	.5	.5	.5	.5	.0	2.5	1.5
24	---	---	5.0	4.5	1.0	.5	.5	.0	.5	.0	2.5	2.0
25	---	---	5.0	3.5	1.0	.0	.0	.0	.5	.0	---	---
26	---	---	3.5	1.5	1.0	.0	.0	.0	.5	.0	1.5	1.0
27	---	---	1.0	.5	1.0	.0	---	---	.5	.0	1.5	1.0
28	---	---	.5	.0	.0	.0	.0	.0	.5	.0	2.5	1.5
29	---	---	.5	.0	.5	.0	.0	.0	---	---	4.0	2.5
30	---	---	1.0	.0	.0	.0	.0	.0	---	---	4.5	3.5
31	---	---	---	---	.0	.0	.0	.0	---	---	6.5	4.5
MONTH	18.5	8.5	14.5	.0	3.5	.0	1.5	.0	.5	.0	6.5	.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.5	6.5	14.0	12.0	26.0	24.5	26.5	24.0	26.0	23.5	25.0	22.0
2	8.0	6.5	15.5	12.5	25.5	24.5	23.5	21.5	25.0	24.5	25.5	22.0
3	8.0	6.0	15.5	13.5	24.0	22.5	21.5	20.0	28.0	24.5	27.5	23.0
4	8.0	7.0	15.0	11.5	24.5	22.5	21.0	19.5	27.5	24.0	25.5	23.0
5	8.5	7.5	11.5	11.0	24.5	23.0	21.5	20.0	25.5	24.0	26.0	22.5
6	8.5	7.5	12.5	11.0	25.0	23.5	24.0	21.0	25.0	24.0	25.5	23.0
7	9.5	7.5	13.0	11.5	24.5	24.0	25.0	22.5	25.0	23.5	26.5	23.5
8	10.0	9.0	13.0	12.0	24.0	22.5	26.0	23.0	24.5	22.5	27.0	24.0
9	9.5	8.5	14.0	12.5	23.5	22.0	25.5	24.0	26.0	23.5	27.0	25.0
10	10.0	8.5	15.0	13.0	25.0	22.5	26.0	24.5	26.0	24.0	27.5	24.5
11	10.0	10.0	15.0	14.0	25.0	23.5	25.0	23.0	---	---	26.5	25.0
12	---	---	16.0	14.5	25.0	23.0	25.0	23.0	26.0	24.5	25.5	24.0
13	10.5	10.0	17.0	16.0	23.0	21.0	25.5	24.0	27.0	25.0	24.0	22.0
14	11.0	9.5	16.5	15.0	21.0	20.0	25.5	24.5	27.0	25.5	22.0	21.5
15	11.0	9.5	15.0	14.5	22.5	20.5	27.5	25.5	28.0	26.5	22.5	20.5
16	11.5	9.5	16.0	14.0	23.5	22.0	27.0	25.5	28.0	26.5	24.0	21.0
17	12.0	9.5	17.0	14.5	25.0	23.0	26.5	25.0	28.5	25.5	24.0	22.0
18	11.0	9.5	18.5	16.0	25.5	24.5	26.5	25.5	28.0	25.5	24.5	23.5
19	10.5	9.0	20.5	17.0	25.5	24.0	27.5	25.5	27.5	26.0	25.5	24.5
20	10.0	8.5	20.0	19.0	27.0	25.0	27.5	26.5	28.0	25.0	27.0	24.5
21	8.5	7.5	19.0	17.5	26.5	26.0	30.5	27.5	27.5	24.0	26.0	24.5
22	8.5	7.0	18.5	16.0	26.5	25.0	30.0	28.0	26.5	24.5	24.5	22.5
23	8.5	8.0	18.0	17.0	26.0	25.0	29.5	27.0	27.0	24.5	22.5	20.5
24	9.5	8.0	19.5	17.0	26.0	25.0	27.0	25.5	26.5	25.5	22.5	19.5
25	10.0	8.5	21.0	18.5	26.5	26.0	27.5	25.0	26.5	25.0	20.5	19.0
26	11.5	8.5	23.0	20.0	26.0	23.0	28.0	25.5	---	---	20.5	19.0
27	12.5	10.0	24.0	21.5	25.0	22.5	28.5	26.5	---	---	20.0	18.5
28	14.0	11.0	24.5	22.5	25.5	23.0	27.5	25.5	25.5	24.5	19.5	18.0
29	15.0	12.5	25.0	23.0	27.0	24.5	27.0	25.0	26.0	24.5	19.5	17.0
30	15.0	12.0	25.5	24.5	27.0	25.5	25.0	24.0	24.5	23.0	18.0	17.0
31	---	---	26.0	24.0	---	---	25.0	23.0	23.0	22.0	---	---
MONTH	15.0	6.0	26.0	11.0	27.0	20.0	30.5	19.5	28.5	22.0	27.5	17.0
YEAR	30.5	.0										

04193490 MAUMEE RIVER NEAR WATERVILLE, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1			---	---	12.3	10.0	---	---	11.1	10.9	12.7	12.4
2			---	---	10.4	9.8	---	---	11.2	11.0	12.6	12.3
3			---	---	10.4	10.3	---	---	11.3	11.0	12.3	11.7
4			---	---	10.4	10.2	---	---	11.2	11.0	12.3	11.8
5			---	---	10.6	10.3	11.9	10.9	11.3	11.0	12.5	12.2
6			---	---	10.9	9.8	11.2	10.7	11.1	11.0	12.5	12.2
7			---	---	11.1	9.8	11.3	11.0	11.1	10.9	12.6	12.3
8			10.5	8.3	11.1	10.6	11.0	10.2	11.0	10.8	12.7	12.4
9			9.3	8.2	10.7	10.4	11.9	10.1	11.1	10.9	12.9	12.6
10			9.1	8.1	10.4	10.4	11.9	11.4	11.2	10.8	13.1	12.4
11			9.4	8.8	10.7	10.2	11.9	11.5	10.9	10.5	12.8	12.2
12			10.4	9.3	10.5	10.1	11.8	11.3	10.7	10.3	13.4	12.1
13			10.5	9.4	10.2	9.7	11.9	11.6	10.6	10.3	12.6	11.9
14			11.6	10.4	11.1	10.9	11.6	11.4	10.9	10.3	12.9	12.4
15			11.4	10.4	11.0	10.4	11.8	11.4	11.4	10.9	12.9	12.7
16			11.1	9.8	10.3	9.8	11.7	11.1	11.8	11.4	12.6	12.0
17			11.2	10.1	10.0	9.7	11.3	11.1	11.9	11.7	12.0	11.9
18			11.4	9.7	10.0	9.7	11.5	11.1	12.1	11.7	12.0	11.6
19			11.5	9.9	9.7	9.1	11.4	11.0	12.0	11.7	11.7	11.5
20			11.7	9.9	9.9	9.1	11.3	11.0	12.1	11.4	11.9	11.3
21			12.4	9.5	10.2	9.8	11.4	11.2	12.3	12.0	11.5	10.6
22			12.2	10.5	10.5	10.2	11.2	11.0	12.2	11.7	11.3	10.5
23			12.0	10.6	10.4	10.0	11.1	10.8	12.0	11.8	11.3	10.7
24			12.1	10.4	10.3	10.0	11.1	10.9	12.1	11.9	11.5	11.1
25			12.1	10.7	10.1	10.0	11.0	10.8	12.1	11.9	---	---
26			12.7	10.7	10.9	10.0	10.9	10.6	12.1	12.0	13.8	13.4
27			12.6	11.4	11.8	10.8	---	---	12.3	11.7	13.3	13.1
28			12.8	11.4	11.6	10.3	11.2	10.7	12.7	11.9	13.2	12.9
29			13.1	12.3	11.6	11.3	10.9	10.7	---	---	13.0	12.8
30			13.6	11.8	11.4	10.6	10.9	10.5	---	---	12.8	12.7
31			---	---	---	---	10.8	10.6	---	---	12.4	11.8
MONTH			13.6	8.1	12.3	9.1	11.9	10.1	12.7	10.3	13.8	10.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.7	11.2	8.7	5.5	7.4	4.6	4.4	2.8	11.4	5.3	10.1	5.7
2	11.7	11.3	9.8	6.2	5.7	3.6	4.8	2.9	12.0	8.3	10.4	7.4
3	12.0	11.4	12.1	7.2	6.0	3.2	5.5	3.9	12.7	6.6	9.7	6.4
4	11.6	10.3	10.2	8.8	7.4	3.2	5.2	4.1	11.6	6.1	9.0	6.0
5	11.5	10.3	9.8	8.0	6.9	4.9	5.7	4.1	9.6	5.6	9.7	5.1
6	10.8	10.0	12.2	8.1	6.5	4.2	4.1	2.9	12.3	5.8	8.8	5.5
7	11.0	10.0	12.1	10.0	5.0	3.1	4.4	2.9	10.0	6.9	9.1	5.3
8	10.9	10.2	10.4	8.6	6.6	5.5	6.4	2.5	11.2	4.5	8.5	5.8
9	10.9	10.2	10.0	7.5	6.1	3.5	4.6	3.1	12.5	5.3	8.0	3.4
10	10.6	8.9	10.0	7.8	---	---	7.3	2.6	14.2	6.4	9.2	3.6
11	10.4	9.2	9.4	8.2	---	---	9.6	3.2	---	---	8.3	5.9
12	---	---	8.3	7.5	---	---	6.7	4.7	13.4	8.4	6.3	4.8
13	---	---	8.5	7.1	---	---	9.1	3.6	13.6	7.7	4.6	3.5
14	---	---	8.0	6.8	---	---	7.0	4.1	13.0	7.8	7.3	4.0
15	---	---	7.7	6.5	---	---	7.3	3.9	14.7	10.2	11.3	5.9
16	---	---	8.3	5.2	---	---	9.7	5.1	13.0	9.8	10.4	7.0
17	---	---	7.6	6.1	---	---	10.5	6.5	14.6	8.3	9.8	7.0
18	---	---	7.3	4.9	---	---	18.0	10.5	13.6	8.6	9.4	7.6
19	---	---	8.7	4.2	---	---	17.0	13.1	10.0	6.4	8.4	5.6
20	---	---	9.2	5.5	---	---	14.7	8.2	10.4	4.7	10.5	5.5
21	---	---	---	---	---	---	10.5	5.9	10.6	5.1	9.3	7.0
22	---	---	---	---	---	---	9.6	3.8	9.0	6.4	8.2	5.7
23	---	---	---	---	---	---	9.1	4.0	13.2	6.5	8.0	6.3
24	8.3	7.9	9.8	7.1	6.5	3.3	8.5	3.0	10.3	6.1	9.7	6.4
25	7.8	6.0	7.7	6.7	8.5	4.3	10.7	3.4	7.7	3.3	9.7	7.4
26	9.5	4.9	8.0	5.6	7.7	4.1	11.6	6.5	---	---	10.4	7.9
27	---	---	6.8	4.2	5.5	3.8	10.5	6.1	---	---	9.5	8.2
28	---	---	6.1	4.4	5.9	4.0	11.1	5.4	6.8	4.3	10.0	7.8
29	7.7	5.9	---	---	6.0	3.7	11.4	4.9	9.0	5.6	10.8	8.2
30	9.0	6.6	6.1	4.2	5.4	2.3	12.1	5.0	7.2	3.3	9.2	7.2
31	---	---	6.4	4.5	---	---	13.1	6.2	6.7	3.1	---	---
MONTH	12.0	4.9	12.2	4.2	8.5	2.3	18.0	2.5	14.7	3.1	11.3	3.4
YEAR	18.0	2.3										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04193500 MAUMEE RIVER AT WATERVILLE, OH

(National stream quality accounting network station)

LOCATION.--Lat 41°30'00", long 83°42'46", Lucas County, Hydrologic Unit 04100009, on downstream side of second pier from left end of bridge on State Highway 64 at Waterville, 3 mi (5 km) downstream from Tontogany Creek, and 20.7 mi (33.3 km) upstream from mouth.

DRAINAGE AREA.--6,330 mi² (16,395 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1898 to December 1901, August 1921 to December 1935, March 1939 to current year.

REVISED RECORDS.--WSP 894: 1930(M). WSP 1084: 1946. WSP 1387: 1900(M), 1922-23, 1933. WDR OH-68-1: 1967. WDR OH-70-1: Drainage area. 70-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 595.71 ft (181.572 m) National Geodetic Vertical Datum of 1929. Nov. 19, 1898, to Dec. 31, 1901, Aug. 26, 1921 to July 31, 1930, nonrecording gage, Aug. 1, 1930 to Dec. 31, 1935, water-stage recorder, Mar. 14, 1939 to Mar. 12, 1940, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are fair. Low flow slightly regulated by powerplants upstream from station. Small diversion upstream from gage into Portage River basin (see station 04195500).

AVERAGE DISCHARGE.--53 years (1921-35, 1939-78) 4,826 ft³/s (136.7 m³/s), 10.35 in/yr (263 mm/yr); includes flow in Miami and Erie Canal at Waterville 1922-29; canal was abandoned in 1929 and was filled in prior to March 1939.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 94,000 ft³/s (2,660 m³/s) Feb. 16, 1950, gage height, 14.52 ft (4.426 m); maximum gage height, 16.17 ft (4.929 m) Feb. 12, 1959 (ice jam); practically no flow at times prior to June 30, 1929, when entire river flow was being diverted by canal; minimum daily since canal was abandoned, 26 ft³/s (0.74 m³/s) Oct. 24, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 19.9 ft (6.07 m), from information by local resident, estimated discharge, 180,000 ft³/s (5,100 m³/s), from rating curve extended above 94,000 ft³/s (2,660 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 91,900 ft³/s (2,603 m³/s) Mar. 20, gage height, 14.92 ft (4,548 m); minimum daily, 157 ft³/s (4.45 m³/s) Sept. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1450	672	4470	4510	920	800	29800	4350	2800	4580	382	527
2	1470	912	13800	3620	920	800	24500	2900	2300	6180	303	458
3	1500	1430	15300	4880	920	800	21500	2160	2000	10400	325	444
4	1490	1400	11800	6600	900	800	21700	1680	1800	10900	303	336
5	1510	1040	8800	3830	900	800	22900	2570	1700	10500	261	303
6	1230	1040	6610	2050	900	800	24500	2320	1600	9110	314	261
7	934	966	4250	1830	900	800	39400	2050	1600	7110	406	251
8	1030	959	3710	1700	900	800	43100	2350	2100	5690	698	232
9	1510	846	2410	1600	880	800	37900	2430	2300	4480	586	197
10	2150	1260	2600	1600	880	800	27800	1950	2400	3590	1020	197
11	2130	1300	2800	1500	860	800	23000	2080	2100	2570	1250	242
12	2140	1210	3100	1400	860	800	20900	2130	1700	2030	1150	251
13	1870	1230	3800	1400	860	900	16800	2290	1310	1660	1130	197
14	1670	1090	8000	1300	840	1700	12700	3220	1190	1370	938	359
15	1340	1200	17000	1300	840	11000	9960	4850	1250	1170	750	347
16	1090	1090	38000	1200	840	21900	8050	6560	1550	1080	682	392
17	1050	1330	50500	1200	820	37300	6870	7150	1660	860	419	633
18	1050	1590	56100	1200	820	45400	5770	6370	1390	750	292	733
19	894	1460	64000	1200	820	47600	6600	5440	1110	768	359	541
20	848	1540	60800	1100	820	61400	14100	5160	999	698	303	527
21	820	1990	49600	1100	820	67200	26300	5880	1150	649	458	498
22	690	1950	35200	1100	820	84000	28700	6870	750	1110	750	405
23	670	2030	25800	1100	820	86400	24500	6100	733	1150	617	359
24	759	1900	21100	1000	820	77400	19200	5090	665	601	471	432
25	683	1810	20800	1000	820	62600	14600	4740	682	586	303	291
26	766	1890	17900	1000	820	50300	12100	5020	3190	665	303	242
27	746	1570	13000	980	800	51700	9870	4500	8490	682	271	292
28	634	1880	7110	960	800	53000	7440	3900	5690	444	471	205
29	736	1350	5950	960	---	50800	6180	3600	4220	541	419	157
30	740	1360	5620	940	---	43600	4810	3400	4030	325	485	232
31	596	---	5020	940	---	35200	---	3100	---	382	633	---
TOTAL	36196	41295	584950	56100	23920	899000	571560	122210	64459	92631	17052	10522
MEAN	1168	1377	18870	1810	854	29000	19050	3942	2149	2988	550	351
MAX	2150	2030	64000	6600	920	86400	43100	7150	8490	10900	1250	733
MIN	596	672	2410	940	800	800	4810	1680	665	325	261	157
CFSM	.19	.22	2.98	.29	.14	4.58	3.01	.62	.34	.47	.09	.06
IN.	.21	.24	3.44	.33	.14	5.28	3.36	.72	.38	.54	.10	.06

CAL YR 1977 TOTAL 1868098 MEAN 5118 MAX 64000 MIN 200 CFSM .81 IN 10.98
WTR YR 1978 TOTAL 2519895 MEAN 6904 MAX 86400 MIN 157 CFSM 1.09 IN 14.81

04193500 MAUMEE RIVER AT WATERVILLE, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1950 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: April 1950 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,240 mg/L Mar. 26, 1954; minimum daily mean, 1 mg/L on many days during 1953, 1955, and 1963.
SEDIMENT LOADS: Maximum daily, 208,000 tons (189,000 tonnes) Feb. 12, 1959; minimum daily, 0.26 ton (0.24 tonne) Sept. 18, 1955.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 566 mg/L Dec. 19; minimum daily mean, 5 mg/L on Sept. 30.
SEDIMENT LOADS: Maximum daily, 110,000 tons (99,800 tonnes) Mar. 22; minimum daily, 3.1 tons (2.8 tonnes) Sept. 30.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (JTU)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT												
25...	1530	700	8.5	14.0	7	--	16.0	150	--	--	15	540
NOV												
21...	1415	800	8.4	8.5	9	--	13.8	120	--	--	39	72
DEC												
15...	1100	680	7.8	.5	70	--	12.0	83	--	--	3500	18000
JAN												
24...	1730	840	7.7	.5	2	--	12.5	87	--	--	160	180
FEB												
21...	1600	870	7.6	.5	4	--	12.0	83	--	--	K17	K20
MAR												
17...	1420	320	7.8	.0	100	--	11.3	77	--	--	680	3300
APR												
19...	1530	525	8.2	11.0	50	--	11.1	100	30	--	K10	120
MAY												
09...	1430	570	8.7	14.0	20	--	10.2	98	25	--	K8	100
JUN												
12...	1345	660	8.5	23.0	15	--	7.3	84	35	--	29	68
JUL												
11...	1645	590	8.4	25.0	--	50	9.4	110	47	--	96	94
AUG												
01...	1630	445	9.3	29.5	--	7.0	13.8	180	--	24	30	220
SEP												
13...	1700	670	8.9	21.0	--	15	11.3	120	--	40	130	2300

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	ALKA-LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT												
25...	230	120	52	25	35	5.3	140	0	110	.7	110	53
NOV												
21...	340	120	93	27	35	5.0	270	0	220	1.7	120	51
DEC												
15...	290	130	83	20	19	4.2	200	0	160	5.1	77	40
JAN												
24...	370	140	100	28	38	4.6	270	--	220	8.6	130	59
FEB												
21...	350	120	94	28	39	4.1	280	0	230	11	130	60
MAR												
17...	110	37	30	7.8	14	3.9	85	0	70	2.2	34	23
APR												
19...	160	20	34	18	12	3.3	170	0	140	1.7	70	27
MAY												
09...	200	32	44	21	17	2.8	200	0	160	.6	84	30
JUN												
12...	220	20	49	23	20	4.0	240	0	200	1.2	68	34
JUL												
11...	230	75	67	14	13	4.3	--	--	150	--	63	28
AUG												
01...	180	80	39	20	18	4.3	--	--	100	--	72	34
SEP												
13...	250	110	56	28	45	5.1	--	--	140	--	120	59

04193500 MAUMEE RIVER AT WATERVILLE, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	PHYTOPLANKTON, TOTAL (CELLS PER ML)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M
OCT 25...	.3	.1	396	350	--	--	--	--	.12	9.2	--	--
NOV 21...	.5	5.3	501	470	--	--	--	--	.23	--	13000	--
DEC 15...	.3	10	421	352	--	--	--	--	.32	14	--	--
JAN 24...	.4	9.2	538	500	.77	1.5	3.4	15	.27	--	--	--
FEB 21...	.4	9.3	543	503	1.0	2.6	5.3	23	.35	8.3	--	--
MAR 17...	.1	3.2	182	158	1.4	2.3	4.6	20	.39	11	8400	--
APR 19...	.2	5.8	342	254	1.3	1.6	4.9	22	.23	--	--	--
MAY 09...	.3	.0	373	298	1.6	1.7	3.8	17	.14	8.5	--	4.09
JUN 12...	.3	.4	411	317	1.3	1.5	4.3	19	.17	9.3	20000	3.78
JUL 11...	.3	8.1	391	288	2.1	2.1	12	54	.24	--	--	--
AUG 01...	.3	.3	308	248	2.1	2.3	3.9	17	.12	10	--	--
SEP 13...	.5	.3	410	395	1.4	1.4	1.4	6.2	.23	9.4	--	--

ANALYSES OF MINOR ELEMENTS

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)
NOV 21...	1415	1	1	2	2	<10	1	3	3	10	6	630
JAN 24...	1730	0	0	4	4	<10	5	2	2	34	14	1500
APR 19...	1530	2	2	0	0	<10	2	0	0	12	10	2300
JUL 11...	1645	1	1	12	9	10	1	0	0	9	7	2500

DATE	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
NOV 21...	20	12	2	40	0	<.5	<.5	0	0	60	60
JAN 24...	20	11	4	60	40	<.5	<.5	1	1	30	20
APR 19...	40	4	0	60	20	<.5	<.5	1	1	50	30
JUL 11...	30	140	110	70	0	.5	.5	0	0	20	10

04193500 MAUMEE RIVER AT WATERVILLE, OH--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
MAR							
22...	1815	85500	407	94000	47	58	67
APR							
10...	1630	26200	312	22100	84	91	97

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM
MAR							
22...	74	78	81	84	90	96	100
APR							
10...	99	100	--	--	--	--	--

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	TEMPERATURE (DEG C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY)
OCT					
25...	1530	678	14.0	28	51
NOV					
21...	1415	2090	8.5	18	102
DEC					
15...	1100	19600	.5	162	8570
JAN					
24...	1730	1000	.5	24	65
FEB					
21...	1600	820	.5	2	4.4
MAR					
17...	1420	38500	.0	184	19100
22...	1815	85500	1.0	407	94000
APR					
10...	1630	26200	13.0	312	22100
19...	1530	6640	11.0	55	986
MAY					
09...	1430	2810	14.0	47	357
JUN					
12...	1345	1760	23.0	32	152
JUL					
11...	1645	2430	25.0	61	400
AUG					
01...	1630	370	29.5	17	17
SEP					
13...	1700	205	21.0	25	14

04193500 MAUMEE RIVER AT WATERVILLE, OH--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	83	325	32	58	12	145	61	743	25	62	23	50
2	77	306	33	81	165	6150	51	498	25	62	23	50
3	72	292	33	127	184	7600	68	896	25	62	23	50
4	65	261	34	129	144	4590	85	1510	25	61	23	50
5	56	228	36	101	109	2590	53	548	25	61	23	50
6	48	159	37	104	84	1500	34	188	25	61	23	50
7	50	126	37	97	59	677	32	158	25	61	23	50
8	50	139	37	96	50	501	31	142	25	61	23	50
9	48	196	39	89	38	247	30	130	25	59	23	50
10	43	250	50	170	40	281	30	130	25	59	23	50
11	35	201	33	116	42	318	30	121	24	56	23	50
12	31	179	20	65	45	377	30	113	24	56	23	50
13	29	146	14	46	53	544	29	110	24	56	25	61
14	27	122	9	26	106	2290	29	102	24	54	30	138
15	23	83	10	32	205	9410	27	95	24	54	138	4100
16	19	56	9	26	448	46000	30	97	24	54	254	15000
17	17	48	13	47	529	72100	30	97	24	53	436	43900
18	17	48	13	56	543	82200	30	97	24	53	537	65800
19	18	43	13	51	566	97800	30	97	24	53	558	71700
20	24	55	15	62	549	90100	26	77	24	53	554	91800
21	26	58	17	91	507	67900	26	77	24	53	558	101000
22	23	43	14	74	421	40000	26	77	24	53	486	110000
23	23	42	12	66	301	21000	26	77	24	53	310	72300
24	23	47	10	51	263	15000	25	67	24	53	237	49500
25	27	50	8	39	246	13800	25	67	24	53	170	28700
26	35	72	6	31	207	10000	25	67	24	53	140	19000
27	40	81	7	30	160	5620	25	66	24	52	116	16200
28	35	60	7	36	91	1750	24	62	24	52	97	13900
29	28	56	10	36	80	1290	24	62	---	---	82	11200
30	29	58	12	44	78	1180	25	63	---	---	72	8480
31	31	50	---	---	69	935	25	63	---	---	69	6560
TOTAL	---	3880	---	2077	---	603895	---	6697	---	1573	---	729939

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	69	5550	40	470	33	249	115	1420	18	19	12	17
2	68	4500	40	313	33	205	115	1920	12	9.8	10	12
3	68	3950	40	233	33	178	185	5190	12	11	9	11
4	72	4220	40	181	33	160	129	3800	22	18	13	12
5	122	7540	40	278	26	119	117	3320	22	16	17	14
6	128	8470	40	251	19	82	87	2140	30	25	17	12
7	230	24500	42	232	17	73	138	2650	48	53	19	13
8	300	34900	43	273	18	102	92	1410	52	98	20	13
9	229	23400	46	302	19	118	56	677	42	66	18	9.6
10	166	12500	45	237	22	143	48	465	38	105	18	9.6
11	165	10200	43	241	24	136	58	402	47	159	20	13
12	92	5190	41	236	27	124	56	307	48	149	21	14
13	91	4130	40	247	32	113	43	193	46	140	24	13
14	96	3290	40	348	29	93	35	129	44	111	20	19
15	105	2820	66	864	27	91	29	92	42	85	17	16
16	82	1780	85	1510	24	100	26	76	42	77	17	18
17	58	1080	93	1800	21	94	29	67	40	45	17	29
18	59	919	39	671	20	75	23	47	39	31	18	36
19	64	1140	33	485	19	57	18	37	38	37	19	28
20	227	8640	28	390	19	51	20	38	37	30	19	27
21	297	21100	28	445	12	37	19	33	35	43	19	26
22	287	22200	29	538	13	26	26	78	35	71	20	22
23	247	16300	29	478	17	34	32	99	27	45	20	19
24	158	8190	29	399	8	14	23	37	20	25	20	23
25	109	4300	28	358	8	15	16	25	16	13	18	14
26	96	3140	28	380	146	1260	24	43	13	11	19	12
27	87	2320	28	340	267	6120	24	44	13	9.5	17	13
28	70	1410	28	295	108	1660	22	26	13	17	14	7.7
29	47	784	28	272	85	968	22	32	13	15	10	4.2
30	40	519	30	275	70	762	22	19	12	16	5	3.1
31	---	---	33	276	---	---	22	23	10	17	---	---
TOTAL	---	248982	---	13618	---	13259	---	24839	---	1567.3	---	480.2

TOTAL LOAD FOR YEAR: 1650806.5 TONS.

04195500 PORTAGE RIVER AT WOODVILLE, OH

LOCATION.--Lat 41°26'58", long 83°21'41", in sec. 28, T.6 N., R.13 E., Sandusky County, Hydrologic Unit 04100010, on left bank at upstream side of bridge on U.S. Highway 20 in Woodville, 600 ft (183 m) downstream from unnamed right bank tributary, and 10.3 mi (16.6 km) upstream from Sugar Creek.

DRAINAGE AREA.--428 mi² (1,109 km²).

PERIOD OF RECORD.--July 1928 to December 1935, October 1939 to current year.

REVISED RECORDS.--WSP 894: 1929-30. WSP 1207: 1933. WSP 1387: 1931, 1933. WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 614.75 ft (187.376 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 8, 1933, nonrecording gage, Oct. 9, 1933 to Dec. 30 1935, water-stage recorder, Oct. 17 to Nov. 29, 1939, nonrecording gage, all at same site and datum.

REMARKS.--Records good except those for winter period, which are fair. Flow supplemented by water imported from Maumee River basin for municipal supply for city of Bowling Green 16 mi (26 km) upstream. The importation of this water began Sept. 1, 1951. Sediment data collected at this site 1950 to 1956.

AVERAGE DISCHARGE (adjusted for diversion).--46 years, 311 ft³/s (8.808 m³/s), 9.87 in/yr (251 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s (326 m³/s) Feb. 15, 1950, gage height, 14.51 ft (4.423 m); minimum daily (prior to diversion) 0.4 ft³/s (0.011 m³/s) Aug. 26, 1931 (subsequent to diversion) 1.8 ft³/s (0.051 m³/s) Sept. 22, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 17 ft (5 m), from information by local residents, discharge, 17,000 ft³/s (481 m³/s), from rating curve extended above 11,500 ft³/s (326 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 ft³/s (99.1 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 18	0030	4880	138	9.49	2.893	Apr. 7	2230	5990	170	10.40	3.170
Mar. 22	1930	*8630	244	*12.31	3.752	June 27	0730	4020	114	8.72	2.658
Mar. 28	unknown	4000	113	8.70	2.652						

Minimum daily discharge, 7.5 ft³/s (0.21 m³/s) Sept. 7, 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	30	625	130	210	71	1830	162	154	210	15	12
2	62	30	1630	140	195	70	1400	140	108	178	13	13
3	64	31	893	150	190	70	1100	123	87	534	13	12
4	56	33	518	110	180	70	1830	115	77	584	12	10
5	51	33	361	105	170	70	2180	115	67	368	18	9.2
6	45	33	206	105	160	70	2200	122	59	228	14	8.0
7	41	34	148	105	155	70	5270	105	124	159	25	7.5
8	44	34	140	200	140	70	4130	95	238	117	178	7.5
9	453	36	130	287	140	70	1410	141	161	90	196	8.0
10	724	50	125	190	135	70	854	187	106	73	118	8.0
11	333	85	125	170	130	72	872	142	79	59	93	8.0
12	211	96	125	150	120	105	1020	131	65	51	86	14
13	145	69	165	145	115	260	620	146	70	46	51	17
14	103	57	1250	140	110	750	393	251	69	42	33	35
15	82	50	3670	130	105	1600	278	293	57	42	22	35
16	72	52	4680	125	100	2500	222	262	50	41	19	31
17	63	72	4670	120	96	3000	187	243	45	33	17	29
18	65	115	4310	115	94	4000	178	270	40	28	15	23
19	60	102	3690	110	92	5000	782	368	35	25	15	24
20	56	78	2330	105	90	5620	2040	262	31	23	12	22
21	48	69	1770	100	86	7600	2920	866	29	23	12	17
22	41	68	1000	95	84	8800	2210	789	29	34	10	13
23	38	65	623	95	82	7640	1120	430	28	43	9.8	12
24	38	65	542	90	80	4860	763	392	25	31	12	11
25	37	66	1750	90	77	2430	602	456	25	33	11	11
26	34	80	1160	150	75	1850	443	308	1180	31	10	10
27	39	69	645	270	74	2500	331	223	3860	28	11	9.8
28	41	109	423	260	72	3900	258	169	2190	25	12	9.2
29	34	89	305	250	---	2800	210	139	888	34	10	9.8
30	35	70	225	230	---	1450	186	165	395	28	14	9.8
31	32	---	177	220	---	1510	---	273	---	18	13	---
TOTAL	3217	1870	38411	4682	3357	68948	37839	7883	10371	3259	1089.8	445.8
MEAN	104	62.3	1239	151	120	2224	1261	254	346	105	35.2	14.9
MAX	724	115	4680	287	210	8800	5270	866	3860	584	196	35
MIN	32	30	125	90	72	70	178	95	25	18	9.8	7.5
+	5.6	4.9	4.4	5.2	5.8	5.3	4.6	4.5	4.7	5.0	4.7	4.8
MEAN+	98.4	57.4	1235	146	114	2219	1256	250	341	100	30.5	10.1
CFSM+	.23	.13	2.89	.34	.27	5.18	2.93	.58	.80	.23	.07	.02
IN≠	.26	.15	3.33	.39	.28	5.98	3.28	.67	.89	.27	.08	.03

CAL YR 1977 TOTAL 140788.8 MEAN 386 MAX 4680 MIN 9.2 (+) 5.5 MEAN≠ 380 CFSM≠ .89 IN≠ 12.06
WTR YR 1978 TOTAL 181372.6 MEAN 497 MAX 8800 MIN 7.5 (+) 4.9 MEAN≠ 492 CFSM≠ 1.15 IN≠ 15.61

+ Diversion, in cubic feet per second, from Maumee River basin for municipal supply; furnished by city of Bowling Green.
≠ Adjusted for diversion.

04195600 PORTAGE RIVER AT RAILROAD BRIDGE AT WOODVILLE, OH

LOCATION.--Lat 41°26'58", long 83°21'29", in E 1/2 sec. 28, T.6 N., R.13 E., Sandusky County, Hydrologic Unit 04100010, on right bank at old interurban line bridge abutment, just downstream from railroad bridge, and 800 ft (244 m) downstream from discharge station at Woodville.

DRAINAGE AREA.--428 mi² (1,109 km²) (at discharge station).

PERIOD OF RECORD.--Water years 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1968 to current year.
pH: June 1968 to current year.
WATER TEMPERATURES: June 1968 to current year.
DISSOLVED OXYGEN: June 1968 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Dissolved oxygen concentrations listed as 15.0 mg/L represent concentrations of 15.0 mg/L or higher due to instrument limitations prior to March 29, 1978; 20 mg/L limitations thereafter. See records of discharge for station at Woodville (station 04195500).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 2,350 micromhos Feb. 4, 1971; minimum, 234 micromhos Feb. 12, 1976.
pH: Maximum, 12.0 units Aug. 5, 9, 1971, Aug. 14, 15, 1972; minimum, 6.4 units Nov. 29, 30, 1973.
WATER TEMPERATURES: Maximum, 36.5°C July 8, 1974; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 20.0 mg/L or higher July 12, Aug. 15, 1978; minimum, 0.1 mg/L Aug. 14-16, 1973.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,280 micromhos Jan. 26; minimum, 249 micromhos Mar. 22.
pH: Maximum, 10.0 units Aug. 16; minimum, 6.9 units Apr. 8.
WATER TEMPERATURES: Maximum, 33.0°C July 20, 22; minimum, 0.0°C on many days during winter period.
DISSOLVED OXYGEN: Maximum, 20.0 mg/L or higher July 12, Aug. 15; minimum, 1.1 mg/L Aug. 19.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	840	804	975	942	930	738	936	870	---	---	1080	1030
2	849	840	996	957	720	657	942	876	---	---	1090	1020
3	861	843	999	981	735	690	996	927	---	---	1250	1040
4	1030	840	996	984	789	738	1230	999	---	---	1080	1020
5	1100	1020	1010	996	816	774	1040	999	---	---	1110	1040
6	1090	885	1010	1010	921	792	1010	990	---	---	1140	1080
7	999	882	1010	942	1020	852	1150	984	---	---	1130	1100
8	978	744	1010	993	984	891	936	795	---	---	1120	1080
9	885	615	1100	990	1000	840	810	765	855	834	1170	1110
10	630	564	1030	948	1010	930	870	813	858	804	---	---
11	735	633	948	942	930	900	939	828	879	807	---	---
12	819	738	945	906	1040	924	1010	885	885	870	---	---
13	843	795	1060	918	1040	951	930	915	876	837	---	---
14	831	807	1080	1050	909	585	918	903	897	837	---	---
15	855	831	1090	1070	573	450	942	903	900	879	---	---
16	873	852	1080	906	450	435	942	927	900	858	---	---
17	882	864	915	897	453	420	933	915	900	888	---	---
18	888	870	915	885	456	450	951	900	897	888	---	---
19	888	852	882	852	495	420	930	921	906	897	---	---
20	906	852	984	849	546	495	939	900	927	903	---	---
21	921	900	1010	855	582	552	948	933	933	921	---	---
22	948	918	1010	855	609	585	942	933	1010	918	264	249
23	972	933	894	867	741	660	966	900	1000	990	315	267
24	945	924	1040	894	795	630	1050	915	990	927	381	321
25	951	927	1040	891	654	531	1180	972	987	924	468	360
26	957	936	1010	879	654	534	1280	1040	1020	900	543	468
27	945	927	1060	912	729	657	---	---	1040	996	510	405
28	957	930	1030	903	798	735	---	---	1060	1010	432	402
29	975	951	939	912	828	780	---	---	---	---	453	420
30	978	954	1020	924	861	837	---	---	---	---	510	450
31	960	942	---	---	882	852	---	---	---	---	543	510
MONTH	1100	564	1100	849	1040	420	1280	765	1060	804	1250	249

04195600 PORTAGE RIVER AT RAILROAD BRIDGE, AT WOODVILLE, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	540	471	852	807	783	747	810	750	873	783	1090	939
2	492	450	843	747	825	786	828	777	906	828	1060	933
3	579	492	789	744	852	831	798	732	912	885	1070	957
4	573	540	792	753	873	849	759	720	942	813	1090	969
5	561	510	822	783	939	858	792	762	936	792	1100	960
6	570	426	822	810	954	858	807	783	837	783	1120	978
7	414	342	831	804	903	441	876	795	804	747	1100	987
8	406	354	858	762	789	711	882	795	984	645	1090	1000
9	585	492	804	753	858	795	900	855	621	453	1030	1010
10	---	---	801	762	882	801	918	825	747	543	1160	1030
11	654	642	786	747	933	858	870	741	693	660	1160	1020
12	651	624	825	774	939	831	867	687	750	684	1160	930
13	693	651	831	735	978	813	831	690	732	654	1150	1060
14	750	690	825	810	822	783	825	678	753	594	1100	933
15	768	741	810	762	882	786	867	708	690	552	1120	1010
16	783	762	783	729	954	777	798	693	612	543	1130	939
17	798	780	765	729	885	777	840	696	762	582	1080	873
18	891	690	780	738	861	753	831	705	681	630	1070	921
19	741	558	753	693	861	765	816	732	786	660	999	900
20	546	480	750	684	801	762	822	735	918	738	924	819
21	513	474	705	576	801	726	816	753	930	810	963	855
22	552	480	657	597	822	747	822	732	933	828	1090	837
23	630	558	729	648	906	768	879	750	894	801	1010	834
24	681	630	753	726	840	768	855	780	930	825	1040	855
25	708	681	729	708	897	765	795	660	858	822	1050	864
26	735	660	750	723	840	348	765	675	924	861	1050	861
27	759	738	798	753	444	342	831	735	948	900	1080	948
28	774	735	816	765	555	450	1020	816	984	912	1190	960
29	816	747	834	798	660	558	900	810	1070	945	1130	1010
30	840	780	834	627	747	663	912	795	1070	948	1160	1070
31	---	---	744	639	---	---	903	789	1070	963	---	---
MONTH	891	342	858	576	978	342	1020	660	1070	453	1160	819
YEAR	1280	249										

04195600 PORTAGE RIVER AT RAILROAD BRIDGE, AT WOODVILLE, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.4	8.2	8.5	8.1	8.2	7.9	8.4	8.3	---	---	8.0	7.8
2	8.6	8.3	8.4	8.1	8.0	7.9	8.4	8.2	---	---	8.0	7.8
3	8.7	8.4	8.3	7.9	8.2	8.0	8.3	8.3	---	---	7.9	7.7
4	8.6	8.4	8.1	7.8	8.4	8.2	8.3	8.1	---	---	7.9	7.7
5	8.5	8.0	8.0	7.8	8.6	8.3	8.1	8.1	---	---	7.9	7.7
6	8.5	7.9	8.0	7.8	8.6	8.4	8.1	8.1	---	---	8.0	7.8
7	8.4	8.0	8.1	7.8	8.4	8.1	8.2	8.1	---	---	7.9	7.8
8	8.4	8.0	7.9	7.7	8.2	8.1	8.3	8.1	---	---	7.9	7.5
9	8.1	7.5	8.3	7.8	8.2	7.8	8.1	8.1	7.4	7.1	7.8	7.4
10	7.7	7.5	8.4	7.9	7.9	7.7	8.3	8.1	7.5	7.3	---	---
11	7.9	7.7	8.5	8.1	7.9	7.6	8.2	8.0	7.5	7.2	---	---
12	8.0	7.9	8.5	8.3	8.1	7.7	8.1	8.0	7.4	7.2	---	---
13	8.2	8.0	8.6	8.2	8.1	7.8	8.0	7.9	7.4	7.3	---	---
14	8.3	8.1	8.4	8.1	7.9	7.9	8.0	7.9	7.4	7.3	---	---
15	8.2	8.1	8.4	8.1	7.9	7.9	8.0	7.9	7.5	7.4	---	---
16	8.3	8.1	8.5	8.0	8.1	7.8	8.0	7.9	7.4	7.3	---	---
17	8.3	8.1	8.5	8.1	7.9	7.8	8.0	7.9	7.6	7.4	---	---
18	8.3	8.1	8.4	8.1	7.8	7.7	8.1	7.8	7.6	7.5	---	---
19	8.3	8.0	8.6	8.2	7.7	7.5	8.0	7.9	7.6	7.5	---	---
20	8.5	8.0	8.6	8.3	7.8	7.7	7.9	7.8	7.8	7.6	---	---
21	8.5	8.1	8.7	8.2	8.0	7.8	7.9	7.8	7.8	7.5	---	---
22	8.5	8.0	8.7	8.4	8.2	8.0	7.9	7.8	7.7	7.6	7.5	7.4
23	8.5	8.0	8.6	8.4	8.4	8.1	8.0	7.8	8.1	7.7	7.4	7.3
24	8.5	8.1	8.6	8.2	8.3	8.0	7.8	7.6	7.8	7.5	7.4	7.2
25	8.5	8.0	8.7	8.4	8.0	7.8	7.7	7.6	7.8	7.6	7.6	7.2
26	8.4	7.9	8.8	8.3	8.3	7.9	7.6	7.5	7.9	7.6	7.7	7.5
27	8.3	7.8	8.7	8.5	8.3	8.1	---	---	7.9	7.8	7.5	7.2
28	8.5	7.9	8.9	8.4	8.3	8.2	---	---	7.9	7.8	7.4	7.3
29	8.5	8.0	8.9	8.6	8.5	8.1	---	---	---	---	7.3	7.2
30	8.5	8.0	8.8	8.3	8.4	8.3	---	---	---	---	7.4	7.2
31	8.5	8.1	---	---	8.4	8.3	---	---	---	---	7.5	7.3
MONTH	8.7	7.5	8.9	7.7	8.6	7.5	8.4	7.5	8.1	7.1	8.0	7.2

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.3	7.2	8.0	7.7	7.8	7.5	7.9	7.7	9.1	8.7	9.0	8.3
2	7.3	7.0	8.2	7.8	7.8	7.6	7.9	7.6	8.8	8.5	9.1	8.5
3	7.6	7.3	8.2	7.9	8.0	7.7	7.7	7.7	9.0	8.4	9.2	8.7
4	7.3	7.2	8.8	7.9	8.0	7.7	7.8	7.7	9.4	8.8	9.2	8.8
5	7.3	7.1	8.5	8.4	8.1	7.7	7.9	7.8	9.3	8.4	9.3	8.7
6	7.2	7.1	8.7	8.3	8.3	7.8	8.0	7.9	9.3	8.8	9.5	8.8
7	7.2	7.0	8.8	8.5	8.0	7.4	8.1	7.9	8.9	8.2	9.6	9.1
8	7.1	6.9	8.6	8.3	7.5	7.4	8.2	7.9	8.5	7.8	9.4	9.1
9	7.5	7.1	8.6	8.1	7.8	7.5	8.4	8.0	8.2	7.7	9.4	9.0
10	---	---	8.6	8.3	8.1	7.7	8.6	8.1	8.0	7.8	9.2	8.6
11	7.3	7.2	8.7	8.3	8.4	7.8	8.8	8.3	8.5	7.9	9.0	8.4
12	7.4	7.2	8.5	8.3	8.3	7.8	8.7	8.2	8.8	8.1	8.8	8.1
13	7.5	7.4	8.5	8.0	8.6	7.9	8.6	7.9	9.1	8.2	8.4	8.0
14	7.6	7.4	8.4	8.2	8.9	8.1	8.6	7.8	9.3	8.2	8.2	8.0
15	7.6	7.5	8.2	8.0	8.9	8.3	8.7	7.8	9.3	8.5	8.5	7.9
16	7.6	7.5	8.5	7.9	8.9	8.3	8.8	7.8	10.0	8.1	8.6	7.9
17	7.5	7.5	8.6	8.2	8.8	8.3	8.7	7.8	9.8	9.0	8.9	8.0
18	7.6	7.5	8.7	8.2	8.8	7.9	8.7	7.7	9.5	8.7	9.2	8.1
19	7.5	7.2	8.5	7.8	8.8	8.0	8.7	7.6	8.9	8.1	9.5	8.5
20	7.3	7.2	8.3	7.8	8.8	8.1	8.7	7.6	9.0	8.2	9.4	8.8
21	7.3	7.2	7.8	7.5	8.9	7.6	8.8	7.6	9.4	8.7	9.7	9.0
22	7.4	7.2	7.7	7.6	8.9	7.9	8.9	7.7	9.3	9.0	9.8	9.1
23	7.4	7.3	7.8	7.7	8.8	7.8	9.0	7.8	9.2	9.0	9.7	9.1
24	7.5	7.4	8.0	7.8	8.5	7.6	9.2	8.2	9.1	8.8	9.6	9.2
25	7.5	7.4	7.8	7.7	8.7	7.7	9.3	8.6	9.1	8.7	9.5	9.1
26	7.6	7.5	8.0	7.7	8.7	7.2	9.1	8.5	9.1	8.7	9.5	9.0
27	7.7	7.6	8.2	7.8	7.2	7.1	9.1	8.0	8.9	8.5	9.5	9.0
28	7.7	7.5	8.3	7.8	7.4	7.2	9.2	8.4	9.0	8.2	9.7	9.1
29	7.7	7.5	8.4	8.0	7.5	7.4	9.2	8.3	8.8	8.2	9.7	9.2
30	7.9	7.5	8.1	7.5	7.7	7.5	9.3	8.7	8.7	8.2	9.4	9.0
31	---	---	7.5	7.4	---	---	9.2	8.7	8.7	8.1	---	---
MONTH	7.9	6.9	8.8	7.4	8.9	7.1	9.3	7.6	10.0	7.7	9.8	7.9
YEAR	10.0	6.9										

04195600 PORTAGE RIVER AT RAILROAD BRIDGE, AT WOODVILLE, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	17.0	15.0	13.0	10.5	4.5	3.5	1.5	.5	---	---	1.5	1.0
2	15.0	13.5	14.0	10.5	4.5	4.0	1.0	.5	---	---	1.5	.5
3	13.5	11.0	14.5	12.0	4.0	3.0	1.0	.5	---	---	1.5	.5
4	14.5	10.5	14.0	12.0	3.0	1.5	1.0	1.0	---	---	1.5	.5
5	15.0	13.0	12.5	11.5	1.5	1.0	1.5	1.0	---	---	1.5	.5
6	14.5	12.5	14.0	12.0	.0	.0	1.5	1.5	---	---	1.5	1.0
7	13.5	11.5	14.0	13.0	.5	.0	1.5	1.5	---	---	1.5	1.0
8	15.0	12.0	14.5	13.0	.5	.0	1.5	.5	---	---	1.5	1.0
9	13.5	11.5	15.0	13.0	.5	.0	.5	.5	1.0	.5	1.5	.5
10	12.0	10.5	14.5	7.0	.0	.0	.5	.5	1.0	1.0	---	---
11	11.5	10.0	7.0	4.5	.0	.0	.5	.5	1.0	.5	---	---
12	10.0	9.0	4.5	3.0	1.0	.0	1.0	.5	1.0	1.0	---	---
13	10.0	8.0	4.0	2.0	1.0	.0	1.0	.5	1.0	.5	---	---
14	9.5	7.0	4.5	3.5	1.0	.0	.5	.5	1.0	.5	---	---
15	10.0	8.0	7.0	4.5	.5	.5	.5	.5	1.0	1.0	---	---
16	9.0	7.0	8.5	7.0	1.5	.0	1.0	.5	1.0	.5	---	---
17	7.5	4.5	8.0	6.0	2.0	.0	.5	.5	1.0	1.0	---	---
18	9.0	6.5	6.0	5.0	3.0	2.0	1.0	.0	1.0	1.0	---	---
19	10.5	8.0	5.5	3.5	3.5	3.0	.5	.5	1.0	1.0	---	---
20	10.5	7.0	7.5	5.0	3.5	3.0	.5	.0	1.5	1.0	---	---
21	11.5	8.0	8.5	5.5	2.5	1.0	.5	.5	1.5	1.0	---	---
22	12.5	10.0	8.0	4.5	1.0	.0	.5	.5	1.5	1.0	3.5	2.0
23	11.0	10.0	5.0	4.5	1.0	.0	1.0	.0	1.5	1.0	4.0	3.5
24	12.5	9.0	6.0	4.5	3.0	.5	1.0	.0	1.0	.5	3.5	2.0
25	13.0	11.0	4.5	2.5	3.0	.0	.5	.0	1.0	.5	2.0	1.0
26	14.0	12.0	2.5	.5	.0	.0	.5	.5	1.5	.5	2.0	1.0
27	12.5	11.0	1.0	.0	.0	.0	---	---	1.5	1.5	2.5	2.0
28	12.5	10.5	1.0	.0	.5	.0	---	---	1.5	1.0	4.0	2.0
29	12.0	9.5	.5	.0	.5	.0	---	---	---	---	5.0	4.0
30	11.5	9.0	2.0	.0	1.0	.0	---	---	---	---	5.5	4.0
31	11.5	8.5	---	---	1.0	.5	---	---	---	---	8.5	5.0
MONTH	17.0	4.5	15.0	.0	4.5	.0	1.5	.0	1.5	.5	8.5	.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.5	8.5	15.5	11.0	27.5	22.0	24.0	21.0	28.5	22.0	27.0	18.5
2	10.0	6.0	17.0	11.0	25.0	22.5	20.5	18.5	26.5	23.0	27.5	19.0
3	7.5	4.5	17.5	12.0	23.5	20.0	18.5	18.0	29.5	23.5	27.5	20.5
4	9.0	7.0	14.5	10.5	25.0	19.5	19.0	17.5	29.0	20.0	27.0	19.5
5	9.5	8.5	11.0	10.5	23.5	20.0	20.5	18.0	26.5	20.0	27.0	19.0
6	9.0	8.0	12.0	10.0	24.5	17.0	24.5	19.0	28.0	21.5	28.5	20.5
7	11.5	8.0	13.5	10.0	21.5	17.5	27.5	21.5	24.5	22.5	29.5	21.5
8	11.0	9.5	14.5	12.0	19.0	17.0	28.0	24.0	24.5	21.0	30.0	22.5
9	9.5	7.0	16.5	13.0	21.0	16.0	26.0	23.0	25.5	22.0	27.5	24.0
10	---	---	17.5	13.5	23.5	17.5	26.5	22.5	25.0	21.5	29.5	22.0
11	12.5	11.0	18.0	14.0	25.5	18.5	26.0	20.5	24.5	21.5	28.0	23.0
12	13.0	10.0	17.0	16.0	22.5	19.0	27.0	19.0	26.0	22.0	25.0	21.5
13	12.5	10.0	18.0	15.5	18.5	15.0	26.5	20.5	28.5	22.0	21.0	19.5
14	11.5	8.5	16.5	15.0	20.5	15.0	27.5	22.5	29.5	22.5	22.5	20.0
15	11.5	8.5	15.0	14.0	22.0	16.0	29.5	22.5	30.0	24.0	23.5	19.5
16	12.0	8.5	17.5	13.5	23.0	18.0	28.5	22.5	30.5	25.0	24.0	20.5
17	13.5	8.5	19.5	15.0	26.5	20.5	29.0	21.0	30.0	23.0	26.0	21.0
18	11.0	9.0	23.0	17.5	27.5	22.0	28.5	22.0	31.5	24.0	26.5	23.5
19	11.0	8.5	24.0	19.5	28.5	21.5	31.0	23.5	30.0	25.5	28.0	23.5
20	9.5	8.5	23.0	20.0	30.0	21.5	33.0	25.5	26.5	21.0	29.5	24.0
21	8.5	7.5	19.5	16.5	28.5	23.0	32.5	27.5	28.0	19.5	26.5	21.5
22	10.0	6.0	18.0	14.5	27.5	19.5	33.0	26.0	30.5	20.5	22.5	19.0
23	9.5	9.0	17.0	15.5	28.5	20.0	30.5	26.0	30.0	22.0	23.0	17.0
24	11.0	8.0	20.0	16.0	29.5	21.5	25.5	23.0	28.0	22.5	23.0	16.0
25	12.5	9.5	22.5	17.5	25.5	22.0	29.5	22.0	27.0	23.5	22.0	16.5
26	14.0	9.0	25.5	20.0	23.0	18.5	32.0	24.5	28.0	22.0	21.5	15.5
27	15.5	10.5	26.5	22.0	23.5	20.5	29.5	24.5	27.5	22.0	20.5	15.5
28	17.5	12.0	28.0	22.5	24.5	22.5	29.5	21.5	27.0	22.0	19.5	14.5
29	18.5	13.5	28.0	23.5	25.5	23.0	25.5	22.5	27.0	21.5	19.0	12.5
30	16.5	12.0	27.5	23.5	25.5	23.5	24.0	21.0	25.0	20.5	18.0	14.0
31	---	---	25.5	21.5	---	---	26.5	20.5	25.0	18.0	---	---
MONTH	18.5	4.5	28.0	10.0	30.0	15.0	33.0	17.5	31.5	18.0	30.0	12.5
YEAR	33.0	.0										

04195600 PORTAGE RIVER AT RAILROAD BRIDGE, AT WOODVILLE, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	10.2	7.9	---	---	12.0	9.1	13.9	13.7	---	---	7.0	6.1
2	12.9	8.3	---	---	11.9	11.4	14.3	13.9	---	---	7.2	6.1
3	12.6	9.0	---	---	12.3	11.9	14.3	13.9	---	---	6.9	6.0
4	12.9	9.2	---	---	13.2	12.3	13.8	13.4	---	---	6.9	5.9
5	---	---	---	---	14.1	13.1	13.4	13.0	---	---	7.2	5.8
6	---	---	---	---	14.5	13.8	13.1	12.8	---	---	7.2	6.5
7	---	---	---	---	14.6	13.5	13.2	12.8	---	---	7.1	6.5
8	---	---	---	---	14.0	12.9	13.0	12.9	---	---	8.9	7.1
9	---	---	---	---	13.0	12.6	13.2	12.7	4.6	4.5	9.0	7.4
10	---	---	---	---	12.8	11.8	13.5	13.0	4.9	4.1	---	---
11	---	---	---	---	11.8	11.1	12.9	11.9	5.2	4.1	---	---
12	---	---	---	---	12.0	11.0	11.9	11.3	5.2	5.0	---	---
13	---	---	---	---	11.9	11.3	11.2	10.6	5.1	4.4	---	---
14	---	---	---	---	11.6	11.2	10.5	10.3	5.1	4.4	---	---
15	---	---	---	---	11.9	11.6	10.5	10.1	5.1	5.0	---	---
16	---	---	---	---	11.9	11.6	10.3	10.1	5.1	4.6	---	---
17	---	---	15.0	8.6	11.6	11.2	10.1	9.9	5.3	5.1	---	---
18	---	---	15.0	10.9	11.2	10.8	10.2	9.9	5.4	5.2	---	---
19	---	---	15.0	11.3	10.8	10.5	10.1	9.9	5.5	5.3	---	---
20	---	---	15.0	11.4	10.8	10.6	9.9	9.6	5.7	5.4	---	---
21	---	---	15.0	10.0	11.6	10.9	9.9	9.7	5.9	5.7	---	---
22	---	---	15.0	10.8	12.1	11.6	9.8	9.5	6.6	5.5	10.8	10.6
23	---	---	12.9	10.3	12.1	11.6	9.6	8.3	6.7	6.5	10.6	10.1
24	---	---	13.1	9.7	11.6	10.4	9.8	8.5	6.6	5.4	11.1	10.1
25	---	---	12.8	10.2	11.0	10.2	9.8	9.4	6.5	5.4	11.7	11.2
26	---	---	13.9	10.5	11.5	11.0	10.0	9.3	6.7	5.4	11.7	10.9
27	---	---	12.9	11.5	11.5	11.4	---	---	6.8	6.5	10.9	10.8
28	---	---	13.6	11.1	11.5	11.3	---	---	6.9	6.5	10.9	10.7
29	---	---	14.1	11.9	11.3	11.1	---	---	---	---	10.6	10.4
30	---	---	12.1	9.6	14.2	11.0	---	---	---	---	10.7	10.6
31	---	---	---	---	14.0	13.7	---	---	---	---	10.7	10.0
MONTH	12.9	7.9	15.0	8.6	14.6	9.1	14.3	8.3	6.9	4.1	11.7	5.8

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.0	9.5	14.4	9.9	8.4	5.8	7.1	5.9	14.8	5.1	15.5	8.6
2	10.4	9.6	16.6	10.6	7.9	5.6	7.6	6.7	11.6	4.8	17.2	9.0
3	11.0	10.5	17.1	11.3	9.7	5.9	7.2	7.0	14.6	4.2	15.6	8.7
4	10.5	9.8	14.1	10.8	9.6	6.2	7.5	7.0	17.7	6.1	15.7	8.6
5	9.9	9.6	12.1	9.8	10.7	6.0	8.4	7.2	15.6	5.6	15.1	8.6
6	9.8	9.5	14.4	9.5	11.9	6.6	9.4	7.4	14.4	4.4	15.5	8.1
7	9.5	9.0	15.6	11.1	7.5	5.9	10.0	6.9	8.8	4.5	15.2	7.6
8	9.5	8.8	12.9	10.1	6.9	6.4	10.9	6.0	7.4	5.2	13.3	7.0
9	10.2	9.5	13.2	8.6	8.8	6.3	12.2	6.7	8.3	4.9	12.3	6.0
10	---	---	13.8	8.8	11.3	6.5	15.2	6.7	7.7	6.0	10.1	5.7
11	9.6	8.8	14.5	9.0	13.1	7.1	19.5	7.1	10.6	5.8	11.2	5.2
12	9.6	9.0	11.0	8.4	11.1	6.6	20.0	7.7	13.3	6.3	8.1	5.5
13	9.5	9.3	12.8	7.7	13.6	7.6	18.5	6.8	15.6	6.0	9.7	7.0
14	10.4	9.4	10.1	8.4	19.4	7.5	16.8	5.0	18.7	3.7	9.2	6.9
15	10.5	9.8	10.4	7.7	18.6	8.2	19.1	5.5	20.0	5.4	10.9	6.7
16	10.5	9.7	14.1	8.3	19.9	8.0	17.1	6.0	15.9	4.2	11.2	6.5
17	10.5	9.6	14.7	9.6	17.1	7.2	16.7	5.0	14.5	3.8	13.6	7.5
18	10.1	9.5	17.5	8.8	16.9	6.3	15.5	4.7	9.2	2.1	14.6	6.3
19	9.8	9.0	12.4	7.2	18.3	5.4	16.0	4.4	5.6	1.1	18.2	6.1
20	9.5	9.0	12.2	7.0	18.7	5.0	16.8	3.5	7.1	1.9	16.6	6.6
21	10.1	9.5	8.1	6.5	18.7	3.8	15.2	3.6	6.0	3.0	16.4	5.8
22	10.4	10.0	7.8	7.0	19.0	4.7	17.3	2.9	---	---	17.2	8.4
23	10.3	10.0	8.3	7.3	19.4	5.7	16.5	4.2	---	---	15.4	9.5
24	10.5	10.1	9.9	7.3	19.0	4.3	18.5	4.7	13.6	7.3	14.6	10.2
25	10.4	10.0	8.7	6.7	14.9	4.2	19.3	5.7	12.8	5.1	14.7	9.3
26	10.7	9.6	10.9	6.6	7.4	3.2	17.5	4.5	12.5	6.0	13.8	9.1
27	11.0	9.6	12.4	6.4	5.7	5.3	14.2	3.2	10.2	5.6	13.0	9.5
28	11.5	9.2	12.8	6.6	5.6	5.3	15.6	4.4	12.8	4.9	15.4	9.3
29	12.6	9.0	13.4	6.7	5.9	5.5	12.7	3.8	12.5	6.7	18.5	11.3
30	13.4	8.8	10.0	6.1	6.5	5.6	14.6	4.5	10.0	7.2	15.2	10.8
31	---	---	6.5	5.1	---	---	16.3	4.9	12.4	7.8	---	---
MONTH	13.4	8.8	17.5	5.1	19.9	3.2	20.0	2.9	20.0	1.1	18.5	5.2
YEAR	20.0	1.1										

04196000 SANDUSKY RIVER NEAR BUCYRUS, OH

LOCATION.--Lat 40°48'13", long 83°00'21", in NE 1/4 sec. 10, T. 3 S., R. 16 E., Crawford County, Hydrologic Unit 04100011, on right bank at downstream side of bridge on township road, 1 mile (2 km) upstream from unnamed left bank tributary, 1.5 mi (2.4 km) west of Bucyrus, and 12 mi (19 km) downstream from Loss Creek.

DRAINAGE AREA.--88.8 mi² (230 km²).

PERIOD OF RECORD.--August 1925 to November 1935, July 1938 to December 1951, December 1963 to current year.

REVISED RECORDS.--WSP 744: 1925-32. WSP 874: 1938. WSP 1307: 1926(M), 1928(M), 1931, 1932(M), 1934-35(M), 1939, 1940(M), 1946(M). WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 955.04 ft (291.096 m) National Geodetic Vertical Datum of 1929. Prior to May 11, 1940, nonrecording gage, and May 12, 1940, to December 31, 1951, water-stage recorder, at same site and datum.

REMARKS.--Records good except those for winter periods, which are fair. Low flow slightly affected by operation of reservoirs 5.3 mi (8.5 km) to 6.0 mi (9.7 km) upstream from station, for municipal supply of Bucyrus. Water-quality data collected at this site 1965 to 1977. Sediment data collected 1970 to 1974.

AVERAGE DISCHARGE.--37 years (1925-35, 1938-51, 1964-78), 84.8 ft³/s (2.402 m³/s), 12.97 in/yr (329 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 5,800 ft³/s (164 m³/s) Dec. 14, 1927, gage height, 9.15 ft (2.789 m) from rating curve extended above 2.500 ft³/s (70.8 m³/s); maximum gage-height, 9.83 ft (2.996 m) Dec. 14, 1977; minimum daily discharge, 0.6 ft³/s (0.017 m³/s Sept. 28-30, 1941, Sept. 25-26, 1946.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 23, 1913 reached a stage of 14.5 ft (4.42 m), from floodmarks. Flood of Jan. 22, 1959 reached a stage of 11.9 ft (3.63 m), from floodmarks, discharge, 13,500 ft³/s (382 m³/s), on basis of contracted-opening measurement of peak flow at site 2.8 mi (4.5 km) upstream with drainage area of 85.4 mi² (221 km²), adjusted to gage site by 0.8 power of drainage-area ratio.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 ft³/s (34.0 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 14	2300	*4110	116	*9.83	2.996	Mar. 27	1100	1360	38.5	5.95	1.814
Mar. 15	0600	3230	91.6	8.94	2.725	May 24	2400	1420	40.2	6.07	1.850
Mar. 21	2200	1500	42.5	6.25	1.905						

Minimum daily discharge, 1.4 ft³/s (0.040 m³/s) Sept. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	13	574	33	80	16	132	35	35	7.3	5.1	3.3
2	22	13	293	30	68	16	103	33	26	23	5.3	2.7
3	20	12	132	28	60	16	166	30	21	26	12	1.6
4	15	15	90	27	54	16	270	30	18	24	12	1.9
5	13	14	80	27	48	16	186	33	16	17	9.9	2.5
6	17	19	70	25	44	17	250	29	15	14	7.3	1.9
7	16	20	66	32	40	17	337	25	23	13	13	2.1
8	34	27	60	72	36	18	145	26	20	11	7.2	2.5
9	107	23	56	110	34	18	96	34	19	9.2	6.7	2.3
10	84	21	54	92	32	20	78	39	16	8.5	9.6	1.9
11	48	17	52	80	30	28	91	24	13	8.2	6.3	2.5
12	35	18	52	70	28	54	129	24	30	7.9	7.6	5.6
13	28	14	92	56	27	116	78	58	18	7.6	5.6	5.3
14	22	13	2040	50	25	1570	56	132	16	7.0	5.3	4.2
15	19	13	3030	43	24	2840	44	81	12	6.7	4.8	3.8
16	20	21	864	38	23	1830	37	73	9.5	6.3	4.7	4.4
17	21	190	506	35	22	702	33	85	8.5	6.3	3.9	6.0
18	19	152	355	32	21	367	50	203	11	6.0	3.4	3.1
19	18	73	242	31	21	350	222	113	79	5.6	3.1	2.7
20	17	50	190	29	20	719	554	71	69	4.4	3.3	2.5
21	21	45	130	29	20	1310	752	62	32	3.3	4.2	2.3
22	16	39	100	29	19	923	288	53	22	2.9	3.6	2.3
23	14	32	92	30	19	542	155	45	17	9.5	3.1	1.9
24	14	28	103	31	18	303	133	632	14	9.2	3.8	1.4
25	14	25	465	57	18	210	107	569	12	8.2	3.1	2.1
26	15	23	136	310	18	540	80	149	13	6.8	2.7	1.9
27	14	22	82	391	17	1100	63	88	8.9	7.1	2.3	1.9
28	14	21	54	310	17	391	51	59	10	5.9	6.5	1.9
29	14	22	45	233	---	246	43	41	12	5.2	3.6	2.1
30	13	58	40	175	---	163	38	44	9.2	4.7	4.2	2.3
31	13	---	36	117	---	138	---	50	---	5.1	4.9	---
TOTAL	758	1053	10181	2655	883	14612	4767	2970	625.1	286.9	178.1	82.9
MEAN	24.5	35.1	328	85.6	31.5	471	159	95.8	20.8	9.25	5.75	2.76
MAX	107	190	3030	391	80	2840	752	632	79	26	13	6.0
MIN	13	12	36	27	17	16	33	24	8.5	2.9	2.3	1.4
CFSM	.28	.40	3.69	.96	.36	5.30	1.79	1.08	.23	.10	.07	.03
IN.	.32	.44	4.26	1.11	.37	6.12	2.00	1.24	.26	.12	.07	.03

CAL YR 1977 TOTAL 34547.5 MEAN 94.7 MAX 3030 MIN 1.5 CFSM 1.07 IN 14.47
WTR YR 1978 TOTAL 39052.0 MEAN 107 MAX 3030 MIN 1.4 CFSM 1.21 IN 16.36

04196200 BROKEN SWORD CREEK NEAR NEVADA, OH

LOCATION.--Lat 40°49'34", long 83°09'11", in sec. 32, T.25 N., R. 15 E., Wyandot County, Hydrologic Unit 04100011, on right bank at bridge on State Highway 182, 1.2 mi (1.93 km) northwest of Nevada, 5.0 mi (8.0 km) upstream from mouth.

DRAINAGE AREA.--83.8 mi² (217 km²).

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1959, 1962-65, 1967, 1969-71. February 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 880 ft (268 m) from topographic map.

REMARKS.--Records fair except those for periods of no gage-height record and winter periods, which are poor. Water-quality data collected at this site 1976 to 1977.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 3700 ft ³/s (105 m³/s) Mar. 15, 1978, Maximum recorded gage height 12.53 ft (3.82 m) Dec. 15, 1977; minimum observed discharge, 0.01 ft ³/s (0.28 m³/s) Oct. 4, 1963.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 1100 ft³/s (31.2 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 15	---	3500	99.12	ab*12.53	3.82	Mar. 23	---	1800	60.0	unknown	
Mar. 15	---	*3700	105	unknown	---	Mar. 28	---	1200	34.0	unknown	

Minimum daily discharge 0.15 ft³/s (.004 m³/s) Sept. 6, 7, 9, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	10	120	50	80	15	600	37	27	12	2.1	.78
2	18	9.8	480	44	68	15	500	33	23	16	1.9	.58
3	18	9.8	330	40	57	15	400	30	20	18	2.6	.46
4	16	9.6	170	36	52	15	310	27	15	12	3.3	.32
5	14	9.5	100	34	46	15	230	27	12	9.0	2.4	.28
6	13	9.1	70	35	42	15	272	26	11	8.0	1.6	.15
7	13	9.3	54	43	38	15	434	22	10	6.8	6.4	.15
8	19	9.6	47	82	34	15	174	21	10	5.6	12	.21
9	105	20	43	80	32	15	99	30	13	5.1	7.6	.15
10	101	33	41	74	29	16	75	27	13	4.9	3.9	.21
11	63	24	40	66	28	25	71	22	12	4.7	3.7	.15
12	41	22	40	59	26	45	91	20	15	4.7	2.6	.24
13	25	13	310	52	24	159	63	59	34	4.8	2.1	.36
14	15	11	1280	47	23	1510	52	64	31	4.8	1.5	.95
15	13	11	2610	42	22	2530	45	48	17	4.7	1.1	1.0
16	13	11	1490	38	21	2500	41	45	13	4.6	1.9	.78
17	13	23	940	35	20	1900	38	55	12	4.3	1.1	1.1
18	13	29	750	33	19	1550	41	476	11	3.8	1.1	.95
19	12	62	491	31	19	1300	422	116	11	3.6	.78	.51
20	13	51	343	29	18	1200	603	54	9.4	4.0	.78	.51
21	12	42	281	28	17	1250	792	65	9.6	4.5	.58	.58
22	11	29	192	27	17	1500	436	51	10	5.0	.41	.41
23	10	33	152	27	17	1550	173	41	10	5.8	.46	.41
24	10	29	142	27	16	1000	138	39	11	4.6	.51	.58
25	10	26	609	60	16	780	114	42	11	3.3	.46	.58
26	10	24	518	250	15	700	74	37	8.8	3.0	.64	.36
27	10	22	298	400	15	620	58	38	8.2	2.8	.64	.19
28	10	20	100	500	15	900	50	27	8.0	2.0	.86	.21
29	11	19	74	330	---	1050	45	23	8.6	1.3	.46	.28
30	11	26	64	190	---	860	41	21	10	1.2	.51	.36
31	10	---	58	120	---	740	---	26	---	2.0	.71	---
TOTAL	827	656.7	12237	2909	826	23820	6482	1641	414.6	176.9	66.70	13.79
MEAN	26.7	21.9	395	93.8	29.5	768	216	52.9	13.8	5.71	2.15	.46
MAX	105	62	2610	500	80	2530	792	476	34	18	12	1.1
MIN	10	9.1	40	27	15	15	38	20	8.0	1.2	.41	.15
CFSM	.32	.26	4.71	1.12	.35	9.17	2.58	.63	.17	.07	.03	.005
IN.	.37	.29	5.43	1.29	.37	10.57	2.88	.73	.18	.08	.03	.01

CAL YR 1977 TOTAL 34777.30 MEAN 95.3 MAX 2610 MIN 1.1 CFSM 1.14 IN 15.44
WTR YR 1978 TOTAL 50070.69 MEAN 137 MAX 2610 MIN .15 CFSM 1.64 IN 22.23

Note: No gage-height record Nov. 17 to Dec. 12, Dec. 14, 15, Jan. 26 to Feb. 6, Mar. 15 to Apr. 5, May 27 to June 9, June 19 to July 24.

a-ice jam
b-recorded

04196500 SANDUSKY RIVER NEAR UPPER SANDUSKY, OH

LOCATION.--Lat 40°51'02", long 83°15'23", in sec. 21, T.2 S., R.14 E., Wyandot County, Hydrologic Unit 04100011, on left bank at downstream side of county road bridge, 0.7 mi (1.1 km) downstream from unnamed right bank tributary, 0.8 mi (1.3 km) upstream from Rock Run, and 2 mi (3 km) northeast of Upper Sandusky.

DRAINAGE AREA.--298 mi² (772 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1921 to December 1935, January 1938 to current year. Gage height records collected at site 3 mi (5 km) upstream since 1912 (fragmentary) are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 874: 1927-30, 1933. WSP 1387: 1922(M), 1923-29, 1944. WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 792.25 ft (241.478 m) National Geodetic Vertical Datum of 1929. prior to Sept. 14, 1924, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are fair.

AVERAGE DISCHARGE.--54 years, 242 ft³/s (6.853 m³/s), 11.03 in/yr 280 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 10,000 ft³/s (283 m³/s) Jan. 22, 1959; maximum gage height, 15.00 ft (4.572 m) in gage well, 15.55 ft (4.740 m) from outside floodmark, Jan. 22, 1959 (ice jam); minimum discharge, 0.50 ft³/s (0.014 m³/s) Oct. 2, 1963.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1937 reached a stage of 14.3 ft (4.36 m), from high-water marks in gage well.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft³/s (70.8 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 16	0330	*8400	238	*11.60	3.536	Mar. 27	2000	3260	92.3	6.81	2.076
Mar. 16	1000	6960	197	10.42	3.176	Apr. 21	1330	2540	71.9	5.94	1.811
Mar. 22	0600	4120	117	7.76	2.365						

Minimum daily discharge, 1.7 ft³/s (0.05 m³/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	37	694	120	420	55	607	135	164	26	9.6	12
2	60	35	1330	105	330	55	459	122	119	33	9.1	11
3	59	35	568	100	270	54	478	113	93	38	14	11
4	59	37	310	93	230	54	833	103	79	81	12	9.1
5	48	39	246	88	190	54	776	103	70	65	17	8.2
6	48	41	282	86	170	53	737	103	60	45	16	7.2
7	45	44	321	90	155	53	1220	93	59	33	34	6.4
8	58	49	578	150	140	53	726	90	65	28	24	5.6
9	144	50	1630	305	125	53	412	101	65	24	31	4.6
10	307	74	940	280	115	53	314	103	56	21	24	4.2
11	199	70	400	260	105	56	282	101	49	19	18	5.2
12	150	60	175	230	100	86	325	86	92	16	18	5.6
13	130	58	440	200	92	151	289	105	93	14	15	11
14	110	52	2330	170	86	1370	210	296	86	14	12	12
15	96	45	5760	155	80	4740	156	272	68	14	12	16
16	80	48	7360	140	76	6680	142	210	50	14	11	14
17	70	81	3320	130	72	4620	126	204	40	14	9.6	14
18	60	400	2080	115	70	2430	139	710	35	13	9.1	12
19	54	249	1370	105	68	1630	705	668	41	14	8.6	15
20	52	150	899	100	65	1900	1520	329	103	13	8.2	13
21	50	130	732	100	62	3210	2410	256	103	11	8.2	10
22	48	120	516	99	61	4000	1610	237	65	9.6	7.7	7.7
23	50	105	363	98	60	2640	742	185	48	14	7.2	6.4
24	44	96	318	100	59	1770	540	535	40	14	6.4	6.0
25	40	90	270	230	58	911	456	1180	35	16	7.2	4.6
26	40	85	230	450	57	1390	336	487	34	20	6.8	3.6
27	40	81	210	800	56	2920	256	269	32	16	9.1	2.8
28	41	78	190	1100	56	2480	207	193	34	15	16	2.8
29	41	78	165	840	---	1220	174	151	26	12	11	2.3
30	39	86	145	710	---	781	154	130	26	12	14	1.7
31	39	---	130	560	---	612	---	137	---	11	16	---
TOTAL	2354	2603	34302	8109	3428	46134	17361	7807	1930	689.6	421.8	245.0
MEAN	75.9	86.8	1107	262	122	1488	579	252	64.3	22.2	13.6	8.17
MAX	307	400	7360	1100	420	6680	2410	1180	164	81	34	16
MIN	39	35	130	86	56	53	126	86	26	9.6	6.4	1.7
CFSM	.26	.29	3.72	.88	.41	4.99	1.94	.85	.22	.07	.05	.03
IN.	.29	.32	4.28	1.01	.43	5.76	2.17	.97	.24	.09	.05	.03

CAL YR 1977 TOTAL 94973.0 MEAN 260 MAX 7360 MIN 11 CFSM .87 IN 11.86
WTR YR 1978 TOTAL 125384.4 MEAN 344 MAX 7360 MIN 1.7 CFSM 1.15 IN 15.65

04196500 SANDUSKY RIVER NEAR UPPER SANDUSKY, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1969 to current year.
pH: April 1977 to current year.
WATER TEMPERATURES: June 1969 to current year.
DISSOLVED OXYGEN: June 1969 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Dissolved oxygen concentrations listed as 15.0 mg/L represent concentrations of 15.0 mg/L or higher due to instrument limitations prior to March 29, 1978, 20.0 mg/L limitations thereafter.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 3,000 micromhos Sept. 14, 15, 1978; minimum, 200 micromhos June 18, 1970.
pH: Maximum, 9.6 units July 17, 1977; minimum, 7.0 units June 17, 1977.
WATER TEMPERATURES: Maximum, 33.0°C Aug. 9, 1969; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 20.0 mg/L or higher Aug. 21, 22, Sept. 2, 1978; minimum, 0.1 mg/L Aug. 31, Sept. 14, 1978.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 3,000 micromhos Sept. 14, 15; minimum, 276 micromhos Dec. 15.
pH: Maximum, 9.3 units Sept. 24; minimum, 7.1 units June 12.
WATER TEMPERATURES: Maximum, 32.0°C July 20; minimum, 0.0°C Mar. 3-6, 9-11.
DISSOLVED OXYGEN: Maximum recorded 20.0 mg/L or higher Aug. 21, 22, Sept. 2; minimum recorded, 0.1 mg/L Aug. 31, Sept. 14.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	900	855	831	642	759	744	---	---	891	846
2	---	---	885	870	675	630	---	---	---	---	---	---
3	---	---	885	867	714	657	---	---	---	---	909	870
4	---	---	975	885	744	660	819	804	---	---	936	876
5	789	762	984	924	780	672	849	810	---	---	900	867
6	792	705	1010	921	756	744	846	822	---	---	894	864
7	777	729	1020	939	---	---	819	789	---	---	942	873
8	786	726	1030	951	---	---	771	612	687	675	954	906
9	816	696	1080	954	---	---	---	---	702	684	915	864
10	741	663	1050	891	---	---	---	---	717	702	912	867
11	711	651	960	870	---	---	---	---	729	711	912	888
12	708	663	---	---	762	738	---	---	762	726	942	891
13	720	678	981	819	813	741	---	---	765	732	891	816
14	720	681	894	813	762	384	---	---	771	753	804	387
15	747	708	894	819	375	276	---	---	777	756	366	303
16	780	714	879	798	405	279	---	---	777	759	---	---
17	795	744	870	786	480	414	---	---	789	777	---	---
18	795	759	807	720	504	480	---	---	804	783	---	---
19	810	771	750	678	537	504	---	---	804	786	---	---
20	846	780	744	684	567	540	---	---	804	789	---	---
21	822	783	759	693	588	555	---	---	816	801	489	450
22	828	783	738	696	597	567	---	---	825	804	492	447
23	813	792	759	723	615	591	---	---	825	813	537	477
24	813	792	768	711	651	612	---	---	828	816	564	507
25	846	813	795	735	636	492	---	---	852	825	654	561
26	882	825	789	750	528	489	---	---	849	816	642	609
27	900	834	780	759	---	---	---	---	846	813	597	528
28	909	834	819	771	---	---	---	---	900	822	588	519
29	918	834	801	765	---	---	---	---	---	---	636	588
30	909	840	864	768	---	---	---	---	---	---	645	543
31	888	849	---	---	---	---	---	---	---	---	651	612
MONTH	918	651	1080	678	831	276	849	612	900	675	954	303

04196500 SANDUSKY RIVER NEAR UPPER SANDUSKY, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	636	600	660	627	702	660	789	642	1040	969	1100	1040
2	648	561	669	627	690	650	783	549	1040	993	1130	1050
3	678	510	669	606	705	651	747	603	1030	858	1130	1040
4	510	489	669	633	711	660	747	720	924	855	1090	1050
5	498	474	684	657	744	702	738	723	936	831	1120	1070
6	498	450	702	675	750	702	768	735	951	921	1170	1110
7	471	420	711	672	774	633	747	609	945	561	1170	1080
8	474	414	729	702	693	588	627	570	888	714	1210	1150
9	549	465	726	699	666	639	651	615	894	819	1220	1100
10	606	543	732	699	747	627	699	621	927	852	1260	1180
11	609	591	732	675	675	630	738	702	879	828	1250	1210
12	615	591	741	717	684	420	747	732	867	744	1320	1200
13	630	612	723	681	828	564	780	744	879	834	2980	1210
14	651	579	672	546	783	684	780	750	915	870	3000	2250
15	612	567	579	540	753	699	795	771	924	885	3000	2030
16	657	588	576	558	810	768	798	777	930	882	2300	1200
17	675	645	585	561	807	678	837	798	987	921	1830	1070
18	684	618	594	462	714	681	870	837	966	897	1400	1130
19	630	396	489	390	741	684	897	855	960	942	1500	1130
20	438	363	570	498	735	681	912	888	981	927	1370	1070
21	369	339	573	552	741	522	942	915	1020	960	1380	1050
22	438	342	591	567	720	666	954	864	1060	1010	1230	1060
23	510	444	609	588	744	705	1180	624	1070	1020	1270	1090
24	558	513	633	462	789	747	2070	1310	1120	999	1350	1150
25	579	549	528	318	786	744	2280	1020	1130	1030	1340	1160
26	615	564	504	339	813	756	2810	930	1150	1080	1470	1210
27	645	606	588	519	807	777	972	939	1190	1030	1560	1240
28	657	633	633	588	810	771	948	909	1110	861	1490	1190
29	666	642	669	624	837	786	945	903	1080	927	1450	1210
30	645	624	690	648	777	708	933	915	1100	1020	1500	1240
31	---	---	699	636	---	---	981	930	1170	990	---	---
MONTH	684	339	741	318	837	420	2810	549	1190	561	3000	1040
YEAR	3000	276										

04196500 SANDUSKY RIVER NEAR UPPER SANDUSKY, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	8.1	7.9	8.7	8.0	8.3	8.0	---	---	8.0	7.6
2	---	---	8.2	7.9	8.2	7.8	---	---	---	---	---	---
3	---	---	8.1	7.9	8.4	8.2	---	---	---	---	8.2	7.7
4	---	---	8.1	7.8	8.6	8.4	8.1	8.0	---	---	7.9	7.7
5	8.1	8.0	8.0	7.8	8.8	8.6	8.2	7.9	---	---	8.2	7.8
6	8.1	7.7	8.0	7.8	8.8	8.7	8.1	7.9	---	---	8.3	7.8
7	8.3	8.0	7.8	7.6	---	---	8.0	7.8	8.1	7.5	8.1	7.5
8	8.2	7.9	7.7	7.6	---	---	8.4	7.8	7.8	7.5	7.9	7.6
9	8.1	7.9	7.8	7.6	---	---	---	---	8.1	7.7	8.3	7.4
10	7.9	7.8	8.2	7.6	---	---	---	---	8.1	7.6	8.4	7.8
11	8.4	7.9	8.1	7.9	---	---	---	---	7.9	7.7	8.1	7.7
12	8.2	8.1	---	---	8.3	8.0	---	---	8.0	7.7	8.5	7.8
13	8.2	8.1	8.5	8.1	8.4	8.3	---	---	7.9	7.8	7.9	7.7
14	8.3	8.1	8.6	8.3	8.2	7.9	---	---	8.2	7.7	7.9	7.3
15	8.4	8.0	8.5	8.2	8.0	7.7	---	---	7.8	7.6	7.5	7.3
16	9.0	7.9	8.3	8.1	7.9	7.7	---	---	7.8	7.6	---	---
17	8.9	8.5	8.5	8.0	7.8	7.6	---	---	7.7	7.6	---	---
18	8.5	8.2	8.5	8.1	7.8	7.6	---	---	7.7	7.6	---	---
19	8.3	8.1	8.4	8.1	7.8	7.7	---	---	7.8	7.6	---	---
20	8.3	8.0	8.5	8.2	8.0	7.8	---	---	7.7	7.6	---	---
21	8.3	8.1	8.4	8.2	8.1	8.0	---	---	8.1	7.6	8.9	8.4
22	8.4	8.1	8.6	8.2	8.3	8.2	---	---	8.1	7.7	8.7	8.3
23	8.3	7.9	8.6	8.3	8.5	8.2	---	---	7.7	7.6	8.5	8.2
24	8.1	7.9	8.4	8.3	8.5	8.1	---	---	7.8	7.6	8.3	8.0
25	8.1	7.9	8.5	8.2	8.4	8.2	---	---	7.9	7.6	8.3	8.1
26	7.9	7.7	8.7	8.3	8.3	8.2	---	---	7.9	7.6	8.4	8.2
27	7.9	7.7	9.0	8.5	---	---	---	---	8.0	7.6	8.2	8.1
28	7.9	7.7	8.8	8.4	---	---	---	---	8.0	7.6	8.1	8.0
29	8.0	7.7	8.8	8.6	---	---	---	---	---	---	8.4	8.0
30	8.1	7.8	8.8	8.6	---	---	---	---	---	---	8.4	8.1
31	8.1	7.9	---	---	---	---	---	---	---	---	8.4	8.1
MONTH	9.0	7.7	9.0	7.6	8.8	7.6	8.4	7.8	8.2	7.5	8.9	7.3

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.3	8.1	8.8	8.5	8.0	7.7	8.5	7.5	8.7	7.9	8.6	8.0
2	8.2	8.0	8.7	8.5	7.9	7.7	8.1	7.5	8.7	8.1	8.8	7.9
3	8.2	8.0	9.1	8.5	7.9	7.8	8.0	7.6	8.4	7.7	8.8	7.8
4	8.2	8.0	8.6	8.1	9.0	7.9	8.2	7.9	8.4	7.7	8.7	8.0
5	8.1	7.9	8.5	8.0	8.4	8.2	8.3	7.7	8.0	7.8	8.7	8.1
6	8.1	8.0	8.5	8.1	8.9	8.3	8.4	7.7	8.0	7.8	8.8	8.0
7	8.1	7.8	8.6	8.1	8.3	7.5	9.1	7.9	7.8	7.4	8.8	8.2
8	7.9	7.8	8.5	8.1	8.7	7.5	8.9	8.0	7.9	7.5	8.5	8.1
9	8.2	7.9	8.5	8.1	8.1	7.8	9.0	7.9	8.2	7.7	8.7	8.3
10	8.2	7.9	8.6	8.1	8.9	8.2	8.7	8.0	8.4	7.5	8.8	8.2
11	8.1	8.0	8.7	8.3	8.7	8.1	8.6	8.1	8.8	8.1	8.8	8.4
12	8.2	8.0	8.7	8.1	8.5	7.1	8.6	7.9	8.8	8.2	8.5	8.1
13	8.1	7.9	8.7	8.1	8.1	7.2	8.6	7.6	8.8	8.4	8.2	7.9
14	8.2	7.8	8.5	8.0	9.0	8.3	8.8	7.5	8.7	8.2	7.9	7.4
15	8.0	7.8	8.1	8.0	8.4	7.9	8.9	7.9	8.7	7.7	7.9	7.4
16	7.9	7.8	8.2	8.0	8.3	7.8	8.7	7.8	8.7	7.7	8.5	7.7
17	8.3	8.0	8.3	8.1	9.1	7.8	8.7	8.0	8.1	7.8	9.0	8.0
18	8.4	8.1	8.3	7.5	8.8	8.0	8.8	8.0	8.9	7.8	9.0	8.1
19	8.3	7.7	7.6	7.3	8.7	7.6	8.7	8.0	8.9	8.0	8.6	8.0
20	7.7	7.6	7.8	7.4	8.6	7.9	8.9	8.0	8.9	8.2	8.7	7.9
21	7.6	7.6	8.1	7.6	8.7	8.3	8.8	8.1	8.9	8.2	8.6	7.9
22	7.7	7.6	8.2	8.1	8.6	8.0	8.7	8.0	8.9	8.2	9.0	8.1
23	7.9	7.8	8.4	8.1	8.6	7.9	8.4	7.8	8.9	8.2	8.9	8.3
24	7.9	7.7	8.3	7.6	8.4	7.9	7.7	7.4	8.7	8.4	9.3	8.3
25	7.9	7.8	7.8	7.3	8.7	8.0	7.9	7.5	8.7	8.1	9.2	8.4
26	8.2	7.9	7.6	7.2	8.1	7.6	8.3	7.4	8.8	8.1	9.1	8.4
27	8.2	8.0	7.8	7.6	8.1	7.6	8.5	7.9	8.8	8.1	9.1	8.3
28	8.5	8.1	7.8	7.6	8.1	7.3	8.3	7.9	8.0	7.6	9.2	8.3
29	8.6	8.4	7.9	7.7	8.3	7.7	8.2	7.9	8.4	7.6	9.2	8.5
30	8.7	8.4	8.1	7.8	8.6	7.5	8.3	7.8	8.1	7.8	9.1	8.3
31	---	---	8.0	7.6	---	---	8.5	7.9	8.4	7.6	---	---
MONTH	8.7	7.6	9.1	7.2	9.1	7.1	9.1	7.4	8.9	7.4	9.3	7.4
YEAR	9.3	7.1										

04196500 SANDUSKY RIVER NEAR UPPER SANDUSKY, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	13.0	11.0	6.0	4.0	1.5	1.5	---	---	3.0	1.5
2	---	---	14.5	10.5	6.5	5.5	---	---	---	---	---	---
3	---	---	15.0	13.0	6.0	5.0	---	---	---	---	.5	.0
4	---	---	15.0	13.5	5.0	3.0	1.5	1.5	---	---	1.0	.0
5	15.0	15.0	15.0	13.0	3.0	1.0	2.0	1.5	---	---	1.0	.0
6	16.0	13.5	16.5	14.0	1.5	1.0	2.5	2.0	---	---	2.0	.0
7	14.0	12.0	16.0	15.0	---	---	2.5	2.0	---	---	5.0	2.5
8	14.0	12.0	16.0	15.5	---	---	2.5	1.5	1.5	.5	6.0	4.0
9	13.5	12.0	16.5	14.5	---	---	---	---	2.0	1.0	5.5	.0
10	12.0	10.5	15.5	9.5	---	---	---	---	2.0	1.0	3.5	.0
11	11.5	9.5	9.5	7.5	---	---	---	---	2.0	1.0	2.5	.0
12	10.0	9.0	---	---	1.0	1.0	---	---	2.5	1.5	3.0	2.0
13	10.5	8.5	5.5	3.0	1.5	1.0	---	---	1.5	.5	3.5	1.5
14	11.0	8.0	4.0	2.5	2.0	.5	---	---	2.0	1.0	8.0	2.5
15	11.5	8.0	6.0	3.5	1.5	.5	---	---	2.0	.5	8.0	4.5
16	9.5	7.5	8.0	6.0	3.5	1.0	---	---	2.0	1.0	---	---
17	9.5	6.0	8.0	6.5	5.5	3.5	---	---	2.0	1.0	---	---
18	10.5	7.0	6.5	6.0	6.5	5.5	---	---	2.0	1.0	---	---
19	10.5	8.5	6.5	5.5	6.5	6.5	---	---	2.0	1.0	---	---
20	11.5	8.5	7.0	5.5	6.5	5.0	---	---	2.0	1.0	---	---
21	12.0	8.0	8.0	6.5	4.5	3.0	---	---	2.0	1.0	1.0	1.0
22	13.0	10.0	6.5	5.5	2.5	1.0	---	---	1.5	.5	4.0	1.0
23	12.0	10.5	6.0	5.0	3.0	.5	---	---	1.5	.5	4.5	3.5
24	14.0	10.0	6.5	5.5	4.5	2.0	---	---	1.5	.5	4.0	2.0
25	13.0	12.0	5.5	4.5	4.0	2.0	---	---	2.0	1.0	2.5	2.0
26	14.5	13.0	4.5	1.5	1.5	.5	---	---	2.0	1.5	3.0	2.5
27	14.5	12.5	1.0	.0	---	---	---	---	2.0	1.0	2.5	2.5
28	14.5	12.0	2.5	.0	---	---	---	---	3.5	1.5	5.0	2.0
29	13.5	10.5	2.0	1.5	---	---	---	---	---	---	6.0	4.5
30	13.5	10.0	4.0	2.0	---	---	---	---	---	---	6.0	4.0
31	12.0	9.5	---	---	---	---	---	---	---	---	9.5	5.5
MONTH	16.0	6.0	16.5	.0	6.5	.5	2.5	1.5	3.5	.5	9.5	.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.5	8.5	14.0	11.0	23.0	20.0	26.0	22.5	27.5	19.0	26.0	17.5
2	9.5	6.5	14.5	11.0	22.5	20.5	22.5	21.0	26.5	20.5	26.5	17.5
3	8.0	6.0	14.5	10.5	20.0	18.0	22.0	20.5	27.5	22.0	26.5	18.5
4	9.5	8.0	11.0	9.5	20.0	16.5	21.5	20.5	28.5	19.0	26.5	18.0
5	11.0	6.5	10.0	9.0	21.0	17.0	23.5	20.5	22.5	18.0	27.0	17.0
6	10.0	9.0	10.0	8.5	21.0	16.0	26.0	21.0	21.5	20.0	28.5	18.5
7	11.0	8.5	11.0	8.0	20.0	18.0	27.5	23.0	22.0	19.5	29.5	20.0
8	10.5	9.0	12.0	10.0	21.0	18.5	30.0	24.5	25.5	19.5	31.0	21.0
9	8.5	8.0	13.5	11.0	19.5	17.0	27.5	24.0	24.5	20.5	29.5	22.0
10	12.0	7.5	14.0	11.5	25.0	20.0	27.0	21.5	26.0	21.5	30.5	21.0
11	12.5	11.5	15.5	11.5	26.0	21.0	27.5	20.0	25.0	20.0	28.0	21.0
12	12.5	10.0	14.5	13.5	24.5	22.0	27.5	19.5	26.5	21.0	24.0	21.0
13	12.5	11.0	15.0	13.5	21.5	18.5	27.5	21.5	29.0	21.0	23.0	19.5
14	12.0	9.0	14.0	11.5	21.0	17.5	29.5	23.5	27.0	21.0	23.5	20.0
15	11.0	8.0	11.5	11.0	22.0	18.0	30.5	23.0	27.5	21.5	26.0	19.5
16	11.0	7.5	12.0	10.5	23.5	19.0	30.5	23.0	28.5	22.5	24.5	20.0
17	12.5	9.0	14.0	11.0	25.0	21.5	30.0	21.5	24.5	21.0	26.5	20.5
18	10.5	9.5	15.5	13.0	27.5	23.5	29.5	21.5	29.5	21.5	27.5	21.5
19	10.0	8.5	17.5	14.5	28.0	23.0	31.5	23.0	28.0	22.0	28.5	22.5
20	10.0	7.5	19.0	16.5	27.0	23.5	32.0	24.5	28.0	18.5	29.0	23.0
21	7.5	6.5	19.0	15.5	26.5	23.0	30.5	24.0	27.5	17.0	25.0	22.5
22	8.5	5.5	16.0	13.0	25.5	21.5	31.0	24.0	28.0	18.0	25.5	20.0
23	8.0	7.5	15.5	14.0	26.0	21.0	27.5	23.5	28.5	19.0	25.0	16.0
24	10.5	7.5	15.0	14.5	26.5	22.5	23.5	21.5	28.5	20.5	26.0	16.0
25	10.0	9.0	16.0	14.0	25.5	23.0	25.5	21.5	25.5	22.0	24.5	16.5
26	11.0	8.0	19.0	16.0	25.0	23.5	28.5	22.0	28.0	19.5	23.5	14.0
27	13.0	9.5	21.0	17.5	24.5	24.0	27.0	23.0	28.0	21.5	24.5	14.5
28	15.0	10.5	23.0	19.0	29.5	24.5	28.5	21.0	26.5	21.0	23.0	14.5
29	16.0	12.0	23.5	20.5	31.0	25.5	25.0	20.5	26.5	21.0	22.5	12.5
30	14.5	12.0	23.0	21.5	29.5	25.0	22.5	20.0	21.5	19.0	21.0	14.5
31	---	---	23.5	21.0	---	---	24.5	19.0	23.5	18.0	---	---
MONTH	16.0	5.5	23.5	8.0	31.0	16.0	32.0	19.0	29.5	17.0	31.0	12.5
YEAR	32.0	.0										

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04196500 SANDUSKY RIVER NEAR UPPER SANDUSKY, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	11.8	7.0	11.2	9.0	15.0	11.1	---	---	---	---
2	---	---	12.4	6.9	9.3	8.9	---	---	---	---	---	---
3	---	---	11.1	6.6	10.4	9.2	---	---	---	---	12.0	10.4
4	---	---	9.1	5.3	11.3	10.4	12.9	10.9	---	---	12.1	10.5
5	8.7	8.6	8.5	5.1	11.4	11.0	13.1	12.3	---	---	12.1	10.8
6	11.3	6.8	10.1	5.5	11.5	11.3	12.8	11.9	---	---	12.4	10.1
7	11.5	7.9	8.0	5.3	---	---	12.2	10.9	---	---	10.8	8.5
8	10.0	6.9	6.9	4.7	---	---	11.9	10.3	8.4	7.9	9.7	8.5
9	8.9	4.2	8.6	4.7	---	---	---	---	8.4	7.6	13.4	8.4
10	9.2	8.2	7.6	5.0	---	---	---	---	8.2	7.5	13.7	9.5
11	9.6	8.7	9.4	6.6	---	---	---	---	8.3	7.6	10.4	8.3
12	10.2	9.2	---	---	13.1	12.1	---	---	8.9	7.9	9.2	8.0
13	10.6	9.7	13.5	10.1	12.5	11.8	---	---	10.1	8.1	9.8	8.0
14	10.8	8.9	13.3	10.9	13.4	11.7	---	---	---	---	9.4	7.0
15	10.5	8.7	12.4	11.0	11.9	10.7	---	---	---	---	---	---
16	11.0	8.9	12.0	10.1	12.3	11.5	---	---	---	---	---	---
17	11.7	9.0	12.9	8.6	12.8	10.7	---	---	---	---	---	---
18	11.4	9.5	11.4	9.7	12.2	10.4	---	---	---	---	---	---
19	11.3	8.9	11.1	10.6	11.1	10.0	---	---	---	---	---	---
20	11.5	8.3	11.6	10.7	10.3	10.0	---	---	---	---	---	---
21	11.8	8.5	11.0	10.0	11.1	10.3	---	---	---	---	13.4	13.2
22	11.9	7.7	11.7	9.9	12.5	10.8	---	---	10.1	7.9	13.3	12.7
23	11.5	7.6	11.5	10.7	12.3	11.3	---	---	9.5	7.1	12.8	12.5
24	11.2	7.4	11.7	10.7	11.6	10.8	---	---	8.1	6.9	13.1	12.5
25	9.6	6.5	11.6	11.0	12.2	10.3	---	---	---	---	13.1	12.7
26	8.6	6.0	13.3	11.2	11.7	8.6	---	---	---	---	12.9	12.6
27	9.0	5.7	13.7	12.5	---	---	---	---	---	---	12.8	12.7
28	10.5	6.4	13.8	12.5	---	---	---	---	---	---	12.9	12.2
29	10.8	6.6	13.5	12.7	---	---	---	---	---	---	12.2	11.9
30	11.4	6.6	12.9	11.2	---	---	---	---	---	---	12.1	11.5
31	12.2	7.1	---	---	---	---	---	---	---	---	11.6	10.5
MONTH	12.2	4.2	13.8	4.7	13.4	8.6	15.0	10.3	10.1	6.9	13.7	7.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.5	9.9	12.9	9.1	7.6	5.5	---	---	18.8	5.8	17.3	4.8
2	11.3	10.1	13.3	9.3	7.2	5.4	---	---	16.3	5.7	20.0	3.8
3	11.2	10.8	12.7	9.2	6.7	5.3	---	---	12.3	4.4	17.3	3.3
4	10.8	10.3	10.8	8.6	13.2	6.4	---	---	13.3	4.4	14.4	4.0
5	10.6	10.0	11.2	8.9	8.9	6.6	---	---	9.9	4.7	15.7	4.7
6	10.3	9.9	13.5	9.3	13.5	6.7	---	---	7.9	4.4	18.5	4.5
7	10.4	9.8	13.6	9.9	9.6	5.4	---	---	7.1	3.9	9.1	7.4
8	10.2	9.7	11.2	8.0	14.6	3.1	---	---	8.3	3.4	8.8	6.8
9	10.6	10.2	11.1	7.9	13.6	8.2	---	---	10.9	4.6	8.6	6.9
10	10.5	9.5	11.9	8.2	18.6	8.0	---	---	13.1	.9	8.4	6.2
11	9.7	9.3	12.1	8.4	15.6	9.0	---	---	16.1	5.4	8.4	6.6
12	9.9	9.2	10.5	7.4	12.9	5.0	---	---	16.1	6.4	8.5	7.9
13	9.6	9.0	11.6	7.2	8.6	4.9	---	---	15.3	6.4	9.0	2.2
14	10.3	9.5	8.5	7.6	17.5	8.0	---	---	13.7	5.6	2.4	.1
15	10.4	9.6	8.8	7.6	11.3	6.2	---	---	14.6	2.9	3.4	.9
16	10.9	9.8	10.1	8.3	10.0	4.8	---	---	14.8	3.3	11.3	1.8
17	11.0	9.8	10.9	8.6	18.1	5.5	16.3	6.6	9.1	3.0	17.8	3.5
18	10.0	9.2	10.3	7.5	18.8	7.9	16.9	6.1	18.6	3.6	16.1	3.7
19	9.8	9.2	7.6	7.3	16.6	4.3	17.5	6.4	15.4	3.7	13.9	2.9
20	9.8	9.2	7.7	6.9	13.9	6.8	15.7	5.4	17.7	4.9	14.5	2.9
21	10.2	9.7	8.1	7.0	12.5	5.7	18.7	5.1	20.0	5.5	14.0	2.3
22	10.5	9.9	9.5	7.9	12.9	6.5	17.4	4.7	20.0	5.4	14.2	3.0
23	10.2	9.7	9.4	7.9	13.4	6.0	15.0	4.5	9.0	5.3	15.1	4.3
24	10.2	9.5	8.4	7.0	12.8	5.9	8.2	1.8	8.8	7.6	14.9	4.4
25	10.0	9.4	7.7	7.0	13.7	5.8	10.3	3.1	10.9	7.0	15.2	4.2
26	10.5	9.7	7.4	6.6	9.8	4.7	14.1	2.2	8.8	6.0	15.9	4.7
27	10.3	9.5	7.4	6.8	---	---	13.5	5.0	10.2	5.7	17.8	4.7
28	10.9	9.5	8.0	6.5	---	---	12.9	4.8	9.3	2.5	18.0	4.7
29	11.6	9.3	7.5	6.1	---	---	10.2	4.6	13.3	3.2	18.9	4.9
30	12.2	9.0	8.2	5.7	---	---	10.6	4.3	8.6	3.6	16.0	3.2
31	---	---	7.0	4.9	---	---	14.6	4.8	11.8	.1	---	---
MONTH	12.2	9.0	13.6	4.9	18.8	3.1	18.7	1.8	20.0	.1	20.0	.1
YEAR	20.0	.1										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

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04196800 TYMOCHTEE CREEK AT CRAWFORD, OH

LOCATION.--Lat 40°55'22", long 83°20'56", in SE 1/4 sec. 27, T.1 S., R.13 E., Wyandot County, Hydrologic Unit 04100011, on right bank at downstream side of bridge on State Highway 199 (formerly U.S. Highway 23), 0.4 mi (0.6 km) northwest of Crawford, 1.5 mi (2.4 km) downstream from Lick Run, 2.7 mi (4.3 km) upstream from Little Tymochtee Creek, and 3 mi (5 km) southeast of Carey.

DRAINAGE AREA.--229 mi^2 (593 km^2).

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1961-63, and annual maximum, water years 1961-64, June 1964 to current year.

REVISED RECORDS.--WRD Ohio 1969: 1964(P), 1966(M), 1967(P).

GAGE.--Water-stage recorder. Datum of gage is 785.86 ft (239.530 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter periods, which are fair. Beginning Mar. 9, 1972 water was diverted at a point 29.4 mi (47.3 km) upstream from station into Killdeer Reservoir. Storage is available for low-flow augmentation. During the year, withdrawals totaled 518 mil gal (1.961 hm^3). No releases for 1978 water year. Water-quality data collected at this site 1968 to 1977. Sediment data collected 1970 to 1974.

AVERAGE DISCHARGE.--14 years, 171 ft^3/s (4.843 m^3/s).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,390 ft^3/s (181 m^3/s) March 17, 1978, gage height, 9.94 ft (3.030 m); maximum gage height, 11.21 ft (3.417 m) Mar. 6, 1963 (backwater from ice); no flow Aug. 10, Sept. 13-18, Oct. 23 to Nov. 4, 1964, Aug. 23-26, 1965.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in January 1959 reached a stage of 12.9 ft (3.93 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 1800 ft^3/s (51.0m^3/s) and maximums (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 16	2230	3300	93.5	7.75	2.362	Mar. 28	1830	2330	66.0	6.84	2.085
Mar. 17	0200	*6390	181	*9.94	3.030	Apr. 22	0345	1800	51.0	6.25	1.905
Mar. 22	0800	2880	81.6	7.37	2.246						

Minimum daily discharge, 0.05 ft^3/s (0.001 m^3/s) Aug. 22, Sept. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	35	184	32	494	13	498	46	33	7.4	.87	.92
2	17	33	421	29	350	13	414	37	28	22	.49	.74
3	17	33	383	27	260	13	373	30	22	73	1.8	.58
4	16	33	218	25	200	13	457	27	18	61	1.8	.78
5	14	35	135	23	150	13	425	23	17	39	1.2	.97
6	13	34	10	23	120	125	490	22	15	23	.87	1.4
7	15	36	90	23	100	13	777	32	17	16	3.0	1.8
8	24	35	82	40	80	13	821	35	16	12	2.1	1.8
9	76	33	78	100	68	13	437	32	14	11	2.1	1.8
10	67	33	76	155	60	13	260	31	14	8.0	3.5	1.6
11	62	33	74	140	52	13	208	27	11	6.2	2.5	1.4
12	54	33	74	120	44	13	171	30	17	5.7	2.1	1.2
13	37	31	85	100	40	89	137	38	30	4.8	1.4	1.8
14	26	33	926	86	35	610	103	45	30	4.1	.87	1.9
15	21	33	1620	70	31	2010	74	71	18	3.0	.49	1.8
16	19	32	2790	56	27	4730	59	97	18	3.0	.36	1.6
17	16	28	2860	48	24	6000	51	89	15	4.1	.20	1.9
18	13	27	2060	40	22	4640	56	78	11	3.5	.27	1.7
19	14	27	1670	35	20	3220	528	117	11	2.5	.27	1.4
20	13	26	1340	30	18	2200	1290	146	11	1.4	.14	.39
21	12	26	884	28	16	2430	1630	94	9.3	3.0	.07	.13
22	11	25	498	26	15	2830	1700	73	8.6	.44	.05	.05
23	10	25	300	26	15	2640	1140	62	11	1.2	.07	.20
24	9.3	24	180	26	14	1840	498	54	11	1.4	.10	.14
25	6.2	24	120	61	14	1260	363	135	8.6	1.4	.10	.14
26	11	23	80	103	13	1080	263	203	7.4	1.8	.07	.10
27	11	23	64	187	13	1650	179	114	8.0	2.1	.14	.10
28	11	23	54	359	76	2190	125	71	8.6	2.5	.53	.10
29	12	23	46	481	---	1820	81	51	6.8	2.1	.48	.07
30	16	29	40	577	---	1050	59	43	6.8	1.8	.45	.07
31	36	---	36	568	---	596	---	39	---	1.4	1.0	---
TOTAL	690.5	888	17478	3644	2371	43153	13667	1992	452.1	329.84	29.39	28.58
MEAN	22.3	29.6	564	118	84.7	1392	456	64.3	15.1	10.6	.95	.95
MAX	76	36	2860	577	494	6000	1700	203	33	73	3.5	1.9
MIN	6.2	23	10	23	13	13	51	22	6.8	.44	.05	.05

CAL YR 1977 TOTAL 45816.15 MEAN 126 MAX 2860 MIN .51
WTR YR 1978 TOTAL 84723.41 MEAN 232 MAX 6000 MIN .05

04197000 SANDUSKY RIVER NEAR MEXICO, OH

LOCATION.--Lat 41°02'39", long 83°11'42", in sec. 13, T.1 N., R.14 E., Seneca County, Hydrologic Unit 04100011, on right bank at downstream side of county road bridge, 4.1 mi (6.6 km) upstream from Honey Creek, 4.2 mi (6.8 km) north of Mexico, 4.9 mi (7.9 km) south of Tiffin, and 8.3 mi (13.4 km) downstream from Mile Run.

DRAINAGE AREA.--774 mi^2 (2,005 km^2).

PERIOD OF RECORD.--November 1898 to November 1900 (gage height and discharge measurements only), March 1923 to December 1935, July 1938 to current year. Discharge records for November 1898 to November 1900, published in 22nd Annual Report, Part 4, are unreliable and should not be used.

REVISED RECORDS.--WSP 714: 1929-30. WSP 874: 1927(M). WSP 1387: 1925, 1928-29, 1930(M), 1931. WSP 1912: Drainage area. See also Period of Record.

GAGE.--Water-stage recorder. Datum of gage is 733.1 ft (223.45 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 15, 1929, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are fair. Water-quality data collected at this site 1965, 1966, 1969, 1971 to 1973, 1976, 1977. Sediment data collected 1969 to 1974.

AVERAGE DISCHARGE.--52 years, 577 ft^3/s (16.34 m^3/s), 10.12 in/yr (257 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,900 ft^3/s (535 m^3/s) Jan. 23, 1959, gage height, 22.43 ft (6.837 m), from floodmark; minimum, 1.8 ft^3/s (0.051 m^3/s) Oct. 31, 1942, during repairs to small dam upstream from station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1937 reached a stage of 22.5 ft (6.86 m), from information by local residents, discharge, 19,000 ft^3/s (538 m^3/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,200 ft^3/s (119 m^3/s) and maximums (*):

		Discharge		Gage height				Discharge		Gage height	
Date	Time	(ft^3/s)	(m^3/s)	(ft)	(m)	Date	Time	(ft^3/s)	(m^3/s)	(ft)	(m)
Dec. 17	1300	12700	360	18.13	5.526	Mar. 28	2300	6000	170	12.72	3.877
Mar. 18	0800	*14800	419	*19.81	6.038	Apr. 22	1630	5270	149	11.91	3.630
Mar. 23	0800	9250	262	15.61	4.758						

Minimum daily discharge, 22 ft^3/s (0.623 m^3/s) Sept. 29, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	63	576	300	1000	150	1920	329	241	27	24	38
2	100	85	1980	280	800	145	1590	281	236	36	24	38
3	110	78	1680	265	700	145	1450	245	187	512	24	37
4	112	75	955	250	580	145	1940	222	153	518	24	36
5	112	73	655	240	500	145	2020	211	133	329	24	36
6	102	75	540	290	450	140	1840	202	119	207	24	35
7	92	88	500	241	390	140	2970	192	110	139	65	35
8	94	94	480	500	355	140	2590	187	112	100	115	34
9	153	96	475	770	330	140	1680	192	113	82	95	34
10	425	101	480	660	310	145	1000	200	113	59	121	33
11	481	100	500	580	290	150	801	194	100	38	103	32
12	335	108	560	480	270	160	774	183	94	30	64	32
13	241	99	700	400	250	515	712	181	613	25	52	31
14	185	94	2000	340	235	2330	566	359	329	24	50	31
15	149	92	4500	300	225	7730	446	469	200	27	50	30
16	131	91	10500	270	215	9940	362	428	143	27	49	30
17	119	94	9600	250	205	13700	312	403	115	24	49	29
18	105	175	8000	230	200	14200	301	824	95	24	47	27
19	97	458	6570	220	195	11700	1710	1220	79	24	46	27
20	92	292	4430	210	190	9320	3910	797	76	24	46	26
21	89	209	2930	205	185	7450	4930	593	135	24	45	26
22	85	200	1850	200	180	8890	5210	500	133	24	45	25
23	80	180	1160	200	175	9090	4030	411	97	24	44	25
24	77	170	800	200	170	7390	2270	375	73	24	44	25
25	76	160	660	200	165	4910	1410	972	59	24	43	24
26	70	150	575	200	160	3680	1050	1230	59	24	43	24
27	66	145	500	400	155	5240	767	641	54	24	42	23
28	64	140	440	1600	150	5890	586	425	50	24	41	23
29	64	119	390	2800	---	5630	478	312	45	24	41	22
30	61	128	350	1700	---	4010	394	250	34	24	40	22
31	59	---	330	1300	---	2350	---	250	---	24	40	---
TOTAL	4117	4032	65666	16081	9030	135710	50019	13278	4100	2540	1564	890
MEAN	133	134	2118	519	323	4378	1667	428	137	81.9	50.5	29.7
MAX	481	458	10500	2800	1000	14200	5210	1230	613	518	121	38
MIN	59	63	330	200	150	140	301	181	34	24	24	22
CFSM	.17	.17	2.74	.67	.42	5.66	2.15	.55	.18	.11	.07	.04
IN.	.20	.19	3.16	.77	.43	6.52	2.40	.64	.20	.12	.08	.04

CAL YR 1977 TOTAL 216957 MEAN 594 MAX 10500 MIN 29 CFSM .77 IN 10.43
WTR YR 1978 TOTAL 307027 MEAN 841 MAX 14200 MIN 22 CFSM 1.09 IN 14.76

04197100 HONEY CREEK AT MELMORE, OH

LOCATION.--Lat 41°01'20", long 83°06'35", Seneca County, Hydrologic Unit 04100011, at bridge on State Highways 57 and 100 at Melmore, 1.5 mi (2.4 km) upstream from Buckeye Creek.

DRAINAGE AREA.--149 mi² (386 km²).

PERIOD OF RECORD.--Annual maximum, water years 1961-75, February 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 818 ft (250 m) from topographic map.

REMARKS.--Records good except those for winter periods, which are fair. Water-quality data collected at this site 1976 to 1977.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 3,850 ft³/s (109 m³/s) March 1963; maximum gage height, 10.58 ft (3.225 m) March 1963 (ice jam); minimum discharge 0.58 ft³/s (0.016 m³/s) Sept. 11, 28, 29, 30, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42.5 m³/s) and maximums (*).

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 14	2100	*3420	96.9	* 9.97	3.039	Mar. 21	2200	2620	74.2	8.92	2.719
Mar. 16	1400	239	67.7	8.60	2.621						

Minimum discharge 0.58 ft³/s (0.16 m³/s) Sept. 11, 28, 29, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	8.1	303	62	449	22	365	50	48	7.6	1.5	1.9
2	9.3	8.1	514	57	250	21	283	43	32	7.6	1.4	1.6
3	9.1	6.9	348	54	265	21	360	39	24	8.3	1.8	1.5
4	10	6.9	163	51	115	21	499	36	20	8.8	1.6	1.2
5	9.6	6.9	103	50	76	21	454	36	18	13	1.3	1.0
6	8.8	6.9	81	29	62	21	470	36	17	11	1.2	.78
7	7.8	6.9	64	29	54	21	517	33	16	9.1	29	.86
8	8.3	6.8	59	184	45	21	382	31	16	7.4	175	.86
9	11	23	57	399	40	21	200	32	16	6.5	83	.86
10	50	38	55	514	37	22	144	35	17	5.4	316	.71
11	52	28	56	296	34	22	137	34	14	4.8	152	.78
12	31	22	58	232	31	23	143	31	14	4.3	43	1.0
13	22	18	71	170	29	24	122	62	17	3.8	16	1.8
14	17	15	2270	106	28	726	87	25	65	3.8	8.1	1.7
15	14	13	2910	88	27	2010	66	90	39	3.3	5.4	1.4
16	12	12	2620	90	26	2260	58	75	25	3.0	4.5	1.1
17	10	21	1830	76	25	1700	51	77	19	2.9	3.6	1.0
18	9.1	93	1230	68	25	1350	61	187	16	2.4	3.1	.94
19	9.1	83	851	62	24	1150	620	165	14	2.3	2.7	1.0
20	9.1	42	584	59	24	1270	947	93	12	2.3	2.4	1.0
21	9.1	25	441	57	23	2210	1010	99	11	1.9	2.2	1.0
22	9.3	23	311	55	23	2320	764	79	9.6	1.9	2.1	1.1
23	8.6	21	195	55	23	1990	397	56	8.1	1.9	1.8	1.0
24	8.1	20	170	56	22	1250	291	50	7.6	2.3	1.6	.94
25	7.6	18	150	59	22	676	224	50	6.9	2.1	1.5	.85
26	6.9	18	130	84	22	672	153	48	15	1.8	1.5	.94
27	6.2	17	115	238	22	1220	108	39	48	1.6	1.4	.86
28	5.6	21	97	327	22	1060	83	32	21	1.7	1.9	.64
29	5.8	17	84	427	---	726	68	28	13	1.7	1.6	.71
30	6.2	17	67	470	---	482	59	30	8.8	1.7	1.4	.78
31	6.7	---	62	487	---	369	---	30	---	1.6	1.9	---
TOTAL	399.3	564.5	16049	4991	1845	23722	9213	1851	608.0	137.8	871.5	31.82
MEAN	12.9	22.2	518	161	65.9	765	307	59.7	20.3	4.45	28.1	1.05
MAX	52	93	2910	514	449	2320	1010	187	65	13	316	1.9
MIN	5.6	6.9	55	29	22	21	51	28	6.9	1.6	1.2	.64
CFSM	.09	.15	3.48	1.08	.44	5.13	2.06	.40	.14	.03	.19	.007
IN.	.10	.17	4.01	1.25	.46	5.92	2.30	.46	.15	.03	22	.01

CAL YR 1977 TOTAL 46544.10 MEAN 128 MAX 2910 MIN 1.0 CFSM .86 IN 11.62
WTR YR 1978 TOTAL 60383.92 MEAN 165 MAX 2910 MIN .64 CFSM 1.11 IN 15.08

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04197300 WOLF CREEK AT BETTSVILLE, OH

LOCATION.--Lat 41°14'58", long 83°14'08", Seneca County, Hydrologic Unit 04100011, at bridge on State Highway 590 at Bettsville, 3.5 mi (5.6 km) upstream from East Branch.

DRAINAGE AREA.--66.2 mi² (171.5 km²).

PERIOD OF RECORD.--Annual maximum, water years 1961-75. February 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 690 ft (210 m) from topographic map.

REMARKS.--Records good except those for winter periods, which are fair. Water-quality data collected at this site 1976 to 1977.

EXTREMES FOR PERIOD OF RECORD.-- Maximum discharge, 4,280 ft³/s (121 m³/s) Feb. 27, 1962, gage height, 9.0 ft (2.438 m); minimum recorded discharge, 0.08 ft³/s (0.002 m³/s) Sept. 29, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharges above base of 1,150 ft³/s (32.5 m³/s), and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 16	1830	*1910	54.1	* 6.91	2.106	Mar. 22	0500	1460	41.3	6.40	1.951

Minimum daily discharge, 0.08 ft³/s (0.002 m³/s) Sept. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.2	41	3.2	89	5.2	178	9.4	14	15	.87	.50
2	1.2	1.2	116	2.6	72	5.2	110	7.2	10	54	.77	.47
3	1.3	1.1	38	2.5	60	5.2	136	5.8	7.8	155	3.9	.43
4	1.7	1.1	18	2.4	50	5.2	196	5.2	6.5	85	5.5	.38
5	1.8	.99	15	2.4	39	5.3	245	5.2	5.5	48	2.8	.35
6	1.5	.99	13	2.4	32	5.4	275	4.5	5.1	29	1.6	.28
7	1.4	.99	10	2.7	28	5.6	685	3.5	4.9	18	123	.23
8	1.5	.99	9.2	4.7	23	5.9	202	3.3	4.9	12	247	.19
9	1.5	.99	8.7	25	21	6.3	97	3.3	4.8	8.4	95	.14
10	2.0	1.4	8.8	110	18	6.9	69	1.7	4.3	6.2	133	.14
11	3.0	1.4	8.8	99	15	13	67	1.4	3.7	4.5	91	.13
12	3.7	1.9	19	78	13	22	86	1.3	3.9	3.5	35	.13
13	2.3	2.3	41	56	12	41	48	1.9	3.9	3.0	15	.18
14	1.8	1.9	214	43	10	218	28	5.8	4.3	2.7	7.2	.50
15	1.5	1.6	862	34	9.0	807	19	5.2	6.4	2.4	4.3	.93
16	1.4	1.6	1010	26	8.2	1570	15	4.1	4.7	2.0	3.0	.93
17	1.2	1.6	724	22	7.5	1260	12	6.9	4.3	1.6	2.0	.82
18	1.5	3.5	565	19	7.0	1080	17	106	4.1	1.4	1.5	.58
19	1.4	3.9	339	18	6.6	610	652	50	3.7	1.2	1.4	.54
20	1.4	3.3	216	17	6.2	536	846	30	3.0	1.1	.77	.41
21	1.4	2.6	172	17	6.0	1010	690	81	2.7	.99	.77	.31
22	1.3	2.0	92	17	5.7	1200	296	56	2.6	.87	.62	.26
23	1.3	1.8	67	17	5.5	631	141	34	2.2	1.1	.56	.19
24	1.3	1.7	53	17	5.3	321	100	32	2.0	1.3	.56	.15
25	1.3	1.6	202	190	5.2	159	67	26	5.2	1.5	.58	.13
26	1.3	1.5	95	220	5.2	231	42	19	452	1.6	.54	.12
27	1.3	1.5	60	232	5.2	580	27	15	389	1.6	.54	.12
28	1.4	1.6	50	230	5.2	366	19	12	126	4.3	.54	.09
29	1.3	1.7	47	160	---	280	15	10	55	2.4	.54	.08
30	1.3	2.2	50	130	---	172	12	9.7	26	1.5	.47	.09
31	1.2	---	89	110	---	154	---	22	---	1.1	.50	---
TOTAL	48.9	52.15	5253.5	1909.9	569.8	11317.2	5392	578.4	1172.5	472.26	780.79	9.80
MEAN	1.58	1.74	169	61.6	20.4	365	180	18.7	39.1	15.2	25.2	.33
MAX	3.7	3.9	1010	232	89	1570	846	106	452	155	247	.93
MIN	1.2	.99	8.7	2.4	5.2	5.2	12	1.3	2.0	.87	.47	.08
CFSM	.02	.03	2.55	.93	.31	5.51	2.72	.28	.59	.23	.38	.005
IN.	.03	.03	2.95	1.07	.32	6.36	3.03	.33	.66	.27	.44	.01

CAL YR 1977 TOTAL 16958.07 MEAN 46.5 MAX 1010 MIN .13 CFSM .70 IN 9.53
WTR YR 1978 TOTAL 27557.20 MEAN 75.5 MAX 1570 MIN .08 CFSM 1.14 IN 15.49

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04197450 EAST BRANCH WOLF CREEK NEAR BETTSVILLE, OH

LOCATION.--Lat 41°15'40", long 83°11'04", in SW 1/4 sec. 31, T.4N., R.15E., Sandusky County, Hydrologic Unit 04100011, on right bank at downstream side of bridge on Gilmore Road, 2.7 mi (4.3 km) northeast of Bettsville, 0.9 mi (1.4 km) upstream from mouth.

DRAINAGE AREA.--82.4 mi² (213 km²).

PERIOD OF RECORD.--February 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 660.00 ft (201.168 m) Sandusky County bench mark.

REMARKS.--Records good except those for Dec. 6 to Apr. 4, which is fair. Water-quality data collected at this site 1976 to 1977.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,890 ft³/s (110 m³/s) Mar. 16, 1978, gage height, 11.09 ft (3.380 m); minimum discharge, 0.12 ft³/s (0.003 m³/s) Aug. 4, 5, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 1,300 ft³/s (36.8 m³/s) and maximums (*).

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 15	1130	2170	61.5	9.11	2.776	Mar. 27	unknown	unknown		unknown	
Mar. 16	0100	*3890	110	*11.09	3.380						

Minimum discharge, 1.4 ft³/s (0.040 m³/s) Sept. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	4.2	107	19	150	4.9	200	38	55	32	6.0	2.4
2	4.6	3.6	372	17	110	4.9	240	34	36	77	5.5	2.6
3	4.0	3.8	112	15	80	4.8	310	30	26	148	13	2.5
4	3.8	3.3	59	14	56	4.8	360	26	21	98	26	2.5
5	3.8	3.1	40	13	40	4.7	322	26	19	72	14	2.4
6	3.6	3.5	32	12	30	4.7	316	25	16	46	13	2.4
7	3.5	3.8	30	12	20	4.7	775	21	14	33	41	2.1
8	3.3	3.8	29	16	17	4.7	273	20	12	23	408	1.9
9	3.3	4.4	29	94	14	4.8	139	20	12	18	180	1.9
10	27	5.0	28	66	12	5.1	105	20	12	14	153	1.8
11	34	5.0	29	52	10	10	101	20	9.3	12	124	1.8
12	20	9.0	30	43	9.2	22	137	20	8.6	11	55	1.6
13	15	10	45	36	8.4	132	89	20	9.7	9.3	30	1.6
14	11	7.4	746	32	7.6	1000	66	21	15	9.3	21	1.7
15	8.3	6.0	1930	28	7.0	2870	52	23	16	8.3	16	2.6
16	7.1	5.5	1180	26	6.6	3790	44	23	12	8.3	13	2.5
17	4.8	5.7	689	25	6.2	2600	38	26	9.7	8.0	10	2.5
18	3.0	8.3	563	24	6.1	2000	49	150	8.6	5.5	12	2.5
19	3.0	18	372	23	6.0	1500	846	107	8.0	5.0	10	2.4
20	3.1	13	226	22	5.9	1100	1120	72	7.4	5.0	9.0	1.9
21	3.1	9.7	206	21	5.6	820	1040	124	6.8	4.6	7.4	1.7
22	3.1	8.6	114	20	5.4	1300	487	103	6.5	4.6	6.5	1.7
23	3.1	8.6	75	20	5.3	700	242	66	6.8	4.4	6.0	1.7
24	3.1	8.0	63	20	5.2	390	185	61	6.0	4.8	4.0	1.9
25	3.3	8.0	245	20	5.1	200	141	68	8.3	7.4	3.0	2.4
26	4.4	8.0	167	213	5.0	230	101	58	500	7.1	2.8	2.4
27	4.4	7.8	153	242	4.9	400	74	42	455	8.0	2.8	2.3
28	4.4	7.9	124	605	4.9	580	61	34	165	8.0	2.7	2.3
29	4.4	8.0	105	720	---	400	51	29	82	6.5	2.7	1.7
30	4.2	8.6	45	315	---	340	42	30	47	6.0	2.5	1.7
31	4.2	---	26	220	---	260	---	116	---	6.0	2.5	---
TOTAL	212.5	209.6	7971	3005	643.4	20692.1	8006	1473	1610.7	710.1	1202.4	63.4
MEAN	6.85	6.99	257	96.9	23.0	667	267	47.5	53.7	22.9	38.8	2.11
MAX	34	18	1930	720	150	3790	1120	150	500	148	408	2.6
MIN	3.0	3.1	26	12	4.9	4.7	38	20	6.0	4.4	2.5	1.6
CFSM	.08	.09	3.12	1.18	.28	8.10	3.24	.58	.65	.28	.47	.03
IN.	.10	.09	3.60	1.36	.29	9.34	3.61	.66	.73	.32	.54	.03

CAL YR 1977 TOTAL 55216.71 MEAN 151 MAX 2200 MIN .21 CFSM 1.83 IN 24.93
WTR YR 1978 TOTAL 45799.20 MEAN 125 MAX 3790 MIN 1.6 CFSM 1.52 IN 20.68

04198000 SANDUSKY RIVER NEAR FREMONT, OH
(National stream quality accounting network station)

LOCATION.--Lat 41°18'28", long 83°09'32", in sec. 17, T.4 N., R.15 E., Sandusky County, Hydrologic Unit 04100011, on left bank at downstream side of county road bridge, 2.3 mi (3.7 km) upstream from Ballville diversion dam, 2.5 mi (4.0 km) downstream from Wolf Creek, and 3.5 mi (5.6 km) southwest of Fremont.

DRAINAGE AREA.--1,251 mi^2 (3,240 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1898 to March 1901 (gage height and discharge measurements only, published at "at Fremont"), October 1923 to December 1935, July 1938 to current year. Monthly discharge only for October 1923, published in WSP 1307.

REVISED RECORDS.--WSP 744: 1931-32. WSP 874: 1938. WSP 1144: 1924-30. WSP 1387: 1925, 1928-29, 1931-35. WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 626.3 ft (190.90 m) National Geodetic Vertical Datum, adjustment of 1912. Nov. 18, 1898, to Mar. 10, 1901, nonrecording gage at site 4 mi (6 km) downstream at different datum. Nov. 8, 1923, to Sept. 5, 1930, nonrecording gage at present site and datum.

REMARKS.--Records good except for winter periods, which are fair.

AVERAGE DISCHARGE.--52 years (1923-35, 1938-78), 955 ft^3/s (27.05 m^3/s), 10.37 in/yr (263 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,500 ft^3/s (1034 m^3/s) Mar. 16, 1978 gage height, 13.57 ft (4.136 m); maximum gage height, 15.88 ft (4.840 m) Mar. 15, 1978, (ice jam); minimum discharge, 4.4 ft^3/s (0.12 m^3/s) Feb. 29, 1964 (result of freezeup); minimum gage height, 0.78 ft (0.238 m) Oct. 20, 1963.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 7,000 ft^3/s (198 m^3/s) and maximums(*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 17	2130	17200	487	8.27	2.521	Mar. 16	0230	*36500	1034	13.57	4.136
Jan. 27	--	9000	255	ice jam		Apr. 21	0030	10100	268	5.99	1.826
Mar. 15	1930	ice jam		*15.88	4.840						

Minimum daily discharge, 16 ft^3/s (.453 m^3/s) July 31, Sept. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	129	82	569	480	1900	220	3120	516	379	127	46	48
2	124	82	2960	460	1600	220	2530	458	368	183	49	44
3	119	102	2760	440	1300	220	2190	404	313	481	83	43
4	124	102	1630	400	1100	220	3330	370	254	775	103	40
5	129	102	1010	380	920	220	3530	357	217	497	63	38
6	124	98	730	350	780	220	3240	337	192	350	53	38
7	110	110	700	370	640	220	5850	317	180	243	169	34
8	115	129	700	500	540	220	4170	308	176	171	1010	31
9	137	133	700	800	500	220	2640	307	178	127	645	27
10	300	158	720	1200	450	220	1680	317	163	101	564	25
11	551	177	740	1100	400	225	1320	313	142	83	711	25
12	466	172	800	1000	370	270	1320	304	127	61	399	30
13	339	172	1200	900	350	1400	1110	316	276	54	222	38
14	263	158	12000	800	330	10000	895	415	511	49	145	49
15	207	150	15400	720	320	36000	683	644	324	44	106	49
16	172	145	16100	660	300	33400	569	656	226	39	87	44
17	154	150	16400	600	290	27000	491	599	164	41	75	41
18	133	168	15900	540	280	22000	483	1210	128	32	64	38
19	119	466	10700	480	270	19000	3560	1800	108	26	56	36
20	110	534	6800	450	260	16000	8020	1440	95	20	45	34
21	110	360	4590	430	250	13000	9770	1290	87	24	46	32
22	106	287	2940	410	245	11000	8200	1020	128	20	44	29
23	98	250	1860	400	240	9000	5820	725	118	18	40	29
24	98	230	1390	410	240	7400	3600	637	86	37	37	31
25	98	220	1200	430	235	6400	2250	798	76	30	38	35
26	94	210	1000	1100	230	5580	1660	1510	1410	21	37	33
27	86	200	900	7000	225	9000	1240	1000	1750	25	37	19
28	78	200	800	5000	225	9140	922	608	561	29	35	16
29	78	200	700	4000	---	8300	730	456	288	26	34	18
30	78	207	600	3000	---	6010	606	395	181	20	35	21
31	78	---	540	2200	---	3760	---	460	---	16	42	---
TOTAL	4927	5754	125039	37010	14790	256085	85529	20287	9206	3770	5120	1015
MEAN	159	192	4034	1194	528	8261	2851	654	307	122	165	33.8
MAX	551	534	16400	7000	1900	36000	9770	1800	1750	775	1010	49
MIN	78	82	540	350	225	220	483	304	76	16	34	16
CFSM	.13	.15	3.23	.95	.42	6.60	2.28	.52	.25	.10	.13	.03
IN.	.15	.17	3.72	1.10	.44	7.61	2.54	.60	.27	.11	.15	.03

CAL YR 1977 TOTAL 386146 MEAN 1058 MAX 16400 MIN 47 CFSM .85 IN 11.48
WTR YR 1978 TOTAL 568532 MEAN 1558 MAX 36000 MIN 16 CFSM 1.25 IN 16.91

STREAMS TRIBUTARY TO LAKE ERIE

04198000 SANDUSKY RIVER NEAR FREMONT, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

SUSPENDED SEDIMENT DISCHARGE

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)
JAN 05...	1230	380	.0	6	6.2
FEB 15...	1245	320	.0	4	3.5
MAR 07...	1330	220	.0	11	6.5
APR 11...	1345	1300	13.0	44	154
MAY 01...	1200	516	15.0	28	39
JUN 21...	1300	86	25.0	49	11
JUL 17...	1430	74	26.0	44	8.8
AUG 15...	1500	42	27.0	42	4.8
SEP 06...	1530	38	25.0	24	2.5

ANALYSES OF MINOR ELEMENTS

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)
JAN 05...	1230	1	1	1	1	<10	0	0	0	8	4	450
APR 11...	1345	1	1	1	0	<10	2	0	0	17	9	2800
JUL 17...	1430	1	1	3	0	10	0	0	0	27	11	3800

DATE	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN 05...	20	15	6	20	20	<.5	<.5	1	1	20	20
APR 11...	300	30	5	50	20	<.5	<.5	1	1	30	20
JUL 17...	60	200	65	170	20	.5	.5	0	0	40	10

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04198000 SANDUSKY RIVER NEAR FREMONT, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950 to 1966, 1978

REMARKS.--Sediment data collected at this site 1950 to 1956.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (JTU)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN 05...	1230	765	8.0	.0	5	--	12.9	88	--	--	90	93
FEB 15...	1245	840	7.6	.0	3	--	11.2	77	--	--	500	200
MAR 07...	1330	900	7.8	.0	3	--	12.4	85	--	--	210	280
APR 11...	1345	590	7.5	13.0	40	--	9.8	92	25	--	1300	520
MAY 01...	1200	660	8.6	15.0	15	--	14.8	140	20	--	80	140
JUN 21...	1300	710	7.8	25.0	--	30	5.0	60	40	--	940	270
JUL 17...	1430	705	7.9	26.0	--	40	8.4	100	23	--	1100	1100
AUG 15...	1500	570	8.8	27.0	--	35	13.0	160	--	110	200	110
SEP 06...	1530	820	7.6	25.0	--	5.0	6.2	74	--	17	K53	130

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	ALKA-LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
JAN 05...	370	160	100	29	15	3.4	250	0	210	4.0	130	34
FEB 15...	370	160	98	30	30	3.2	250	0	210	10	140	60
MAR 07...	410	170	110	33	30	3.2	290	0	240	7.4	170	53
APR 11...	280	120	74	22	12	3.0	190	0	160	9.6	87	29
MAY 01...	320	150	86	25	12	2.4	210	0	170	.8	110	27
JUN 21...	290	140	75	24	17	4.5	--	--	150	--	100	33
JUL 17...	280	160	64	30	21	4.2	--	--	120	--	150	43
AUG 15...	240	110	60	22	14	4.1	--	--	130	--	94	25
SEP 06...	280	170	56	33	30	5.3	--	--	110	--	170	47

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML)
JAN 05...	.2	9.3	500	444	--	--	--	--	.10	--	--
FEB 15...	1.7	8.9	559	495	.65	.80	4.1	18	.12	5.2	--
MAR 07...	.3	8.7	590	551	.83	1.3	3.9	17	.16	5.7	23
APR 11...	.2	6.5	387	328	.80	.88	5.5	24	.16	--	--
MAY 01...	.2	3.1	406	369	.78	.95	4.1	18	.08	7.8	91000
JUN 21...	.4	1.9	444	346	1.9	2.0	7.7	34	.19	19	--
JUL 17...	.4	.5	403	385	1.6	1.7	4.6	20	.19	--	--
AUG 15...	.3	4.9	411	302	1.4	1.4	3.9	17	.14	8.0	--
SEP 06...	.5	.3	449	408	1.2	1.3	1.3	5.8	.11	7.6	--

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04198005 SANDUSKY RIVER BELOW FREMONT, OH

LOCATION.--Lat 41°22'12", long 83°06'10", in NW 1/4 sec. 26, T.5 N., R.15 E., Sandusky County, Hydrologic Unit 04100011, on left bank 0.3 mi (0.5 km) downstream from U. S. Highway 20 bridge, 0.7 mi (1.1 km) downstream from Fremont Sewage plant, 7.0 mi (11.3 km) downstream from discharge station near Fremont, and 4.0 mi (6.4 km) upstream from Muskellunge Creek.

DRAINAGE AREA.--1,264 mi² (3,274 km²).

PERIOD OF RECORD.--Water years 1966 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: September 1966 to current year.
PH: September 1966 to current year.
WATER TEMPERATURES: September 1966 to current year.
DISSOLVED OXYGEN: September 1966 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Dissolved oxygen concentrations listed as 15.0 mg/L represent concentrations of 15.0 mg/L or higher due to instrument limitations prior to March 29, 1978; 20.0 mg/L limitation thereafter. See records of discharge for station near Fremont (station 04198000).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,500 micromhos Aug. 29, 30, 1974; minimum, 156 micromhos Apr. 26, 1972.
pH: Maximum, 11.5 units June 28, 1972; minimum, 4.8 units Apr. 26, 1970.
WATER TEMPERATURES: Maximum, 32.5°C Aug. 17, 1970; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 19.4 mg/L May 3, 1978; minimum, 0.0 mg/L Oct. 14, 1970, Nov. 1-5, 1974, Aug. 25, 1975.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,020 micromhos Nov. 16, 17; minimum, 225 micromhos Mar. 22.
pH: Maximum recorded 9.3 units Oct. 5; minimum recorded, 7.1 units Feb. 8
WATER TEMPERATURES: Maximum, 30.0°C July 22; minimum, 0.0°C on many days during December to March.
DISSOLVED OXYGEN: Maximum, 19.4 mg/L May 3; minimum, 1.6 mg/L May 31.

SPECIFIC CONDUCTANCE (MICROMMOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	636	618	825	798	788	765	639	603	---	---	897	888
2	648	635	834	825	824	632	699	644	516	507	897	891
3	653	642	849	831	618	600	---	---	543	516	905	896
4	650	642	855	843	597	578	---	---	566	546	915	905
5	696	668	848	842	588	576	---	---	587	567	924	915
6	711	690	887	849	635	591	---	---	614	590	930	926
7	698	666	917	887	---	---	---	---	636	615	941	927
8	672	651	948	918	---	---	---	---	659	636	947	938
9	677	657	950	930	---	---	---	---	683	659	944	935
10	677	659	947	929	---	---	---	---	696	683	942	936
11	797	677	954	936	---	---	---	---	714	699	959	944
12	836	801	956	947	---	---	---	---	728	714	980	959
13	855	836	987	957	804	791	---	---	746	729	993	977
14	855	804	990	965	833	435	---	---	756	746	995	576
15	794	768	1010	989	419	281	---	---	848	758	540	272
16	770	759	1020	1010	293	281	---	---	882	849	---	---
17	765	743	1020	956	294	284	---	---	884	809	---	---
18	747	737	969	948	344	294	---	---	810	804	---	---
19	749	741	984	924	384	345	705	701	815	807	---	---
20	764	747	918	893	428	383	734	707	824	816	---	---
21	758	743	900	882	462	431	749	732	834	824	269	246
22	750	741	905	882	494	462	770	750	846	834	243	225
23	750	743	896	867	531	495	783	770	852	845	254	237
24	758	746	872	851	581	533	795	785	861	848	285	254
25	759	750	858	816	621	569	812	794	870	860	339	287
26	770	761	879	861	---	---	---	---	876	864	416	345
27	785	753	875	845	---	---	---	---	879	872	426	359
28	766	774	843	758	---	---	---	---	893	879	357	342
29	780	773	776	750	---	---	---	---	---	---	354	342
30	783	777	770	749	575	569	---	---	---	---	380	353
31	800	782	---	---	602	575	---	---	---	---	429	383
MONTH	855	618	1020	749	833	281	812	603	893	507	995	225

04198005 SANDUSKY RIVER BELOW FREMONT, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	458	431	656	638	650	600	687	656	869	836	755	710
2	459	456	668	588	666	650	714	690	873	863	782	743
3	485	458	638	588	680	650	723	668	875	843	810	777
4	503	476	615	597	699	675	744	675	857	816	791	777
5	494	480	642	620	707	694	782	734	830	770	813	788
6	---	---	662	645	710	666	825	782	776	765	846	795
7	---	---	668	659	726	671	800	699	777	761	846	815
8	---	---	708	665	746	699	744	669	858	564	837	821
9	---	---	786	710	755	675	693	659	563	482	842	791
10	---	---	722	701	734	665	711	663	591	486	854	788
11	576	545	720	701	813	738	692	663	624	519	885	863
12	618	576	737	702	855	809	690	656	519	506	900	842
13	665	617	740	728	929	854	728	638	561	530	870	846
14	648	632	735	725	921	708	725	695	600	548	---	---
15	657	647	743	726	767	713	710	681	572	546	---	---
16	674	659	746	732	788	738	693	653	566	552	---	---
17	683	666	740	707	812	767	708	686	572	560	---	---
18	695	683	713	651	765	741	713	693	576	558	930	924
19	701	444	672	620	743	701	714	689	584	573	930	900
20	453	363	626	513	717	683	719	710	584	576	947	897
21	356	333	564	522	723	665	738	716	603	581	938	924
22	365	353	578	537	716	675	761	734	614	582	929	926
23	398	366	605	579	698	671	767	750	627	609	933	927
24	452	399	611	578	672	656	759	752	635	624	957	935
25	507	455	617	636	665	647	788	758	627	602	963	942
26	555	509	---	---	681	363	785	770	648	600	971	962
27	591	557	---	---	476	360	797	783	662	633	987	972
28	608	593	---	---	569	477	810	777	725	660	989	972
29	627	612	---	---	639	575	854	768	719	690	992	969
30	642	626	---	---	677	653	849	827	725	704	1000	980
31	---	---	618	600	---	---	876	851	735	713	---	---
MONTH	701	333	786	513	929	360	876	638	875	482	1000	710
YEAR	1020	225										

04198005 SANDUSKY RIVER BELOW FREMONT, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.7	8.4	8.1	8.0	8.3	7.9	---	---	---	---	8.1	8.0
2	8.4	8.2	8.0	7.9	8.3	8.1	---	---	7.4	7.3	8.1	8.0
3	8.9	8.3	8.0	7.8	8.1	7.9	---	---	7.6	7.2	8.1	8.0
4	9.0	8.8	7.8	7.7	8.0	8.0	---	---	7.6	7.3	8.1	8.0
5	9.3	9.0	7.8	7.6	8.1	8.0	---	---	7.6	7.4	8.1	8.1
6	9.0	8.1	7.9	7.7	8.1	7.9	---	---	7.7	7.5	8.1	8.1
7	8.6	8.2	7.9	7.7	---	---	---	---	7.7	7.2	8.2	8.1
8	8.4	8.0	7.9	7.8	---	---	---	---	7.7	7.1	8.2	8.1
9	8.1	7.8	7.8	7.7	---	---	---	---	7.7	7.4	8.2	8.1
10	8.2	7.8	7.8	7.7	---	---	---	---	7.8	7.5	8.2	8.1
11	8.3	8.0	7.9	7.8	---	---	---	---	7.8	7.7	8.2	8.1
12	8.2	8.1	7.9	7.9	---	---	---	---	7.8	7.5	8.2	8.1
13	8.2	8.0	8.0	7.9	---	---	---	---	7.8	7.6	8.2	8.1
14	8.1	7.9	8.1	8.0	7.9	7.6	---	---	7.8	7.2	8.1	7.9
15	8.0	7.9	8.1	8.0	7.9	7.7	---	---	7.9	7.8	7.9	7.8
16	7.9	7.8	8.2	8.1	8.0	7.7	---	---	7.9	7.9	---	---
17	7.9	7.8	8.2	8.1	8.1	8.0	---	---	8.0	7.9	---	---
18	8.0	7.9	8.2	8.2	---	---	---	---	8.0	7.9	---	---
19	7.9	7.8	8.3	8.1	---	---	7.9	7.8	8.0	7.9	---	---
20	7.9	7.8	8.4	8.2	---	---	8.0	7.8	8.0	7.9	---	---
21	7.9	7.8	8.2	8.1	---	---	8.1	8.0	8.0	7.9	7.8	7.7
22	7.9	7.8	8.1	8.0	---	---	8.1	8.0	8.0	7.9	7.9	7.8
23	8.0	7.8	8.2	8.0	---	---	8.1	7.9	8.0	8.0	7.9	7.9
24	8.0	7.8	8.1	8.0	---	---	8.1	7.8	8.0	8.0	8.0	7.9
25	8.2	7.8	8.1	7.9	---	---	7.8	7.6	8.1	8.0	8.1	8.0
26	8.2	8.0	8.0	7.9	---	---	---	---	8.1	8.0	8.1	8.1
27	8.4	8.1	8.0	7.9	---	---	---	---	8.1	8.0	8.1	8.0
28	8.2	8.1	8.0	7.9	---	---	---	---	8.1	8.0	8.1	8.0
29	8.2	8.0	8.0	7.9	---	---	---	---	---	---	8.2	8.1
30	8.2	8.0	8.1	8.0	---	---	---	---	---	---	8.2	8.1
31	8.2	8.0	---	---	---	---	---	---	---	---	8.4	8.2
MONTH	9.3	7.8	8.4	7.6	8.3	7.6	8.1	7.6	8.1	7.1	8.4	7.7

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.5	8.4	8.9	8.3	8.5	8.1	8.4	8.1	8.7	8.0	7.5	7.4
2	8.4	8.4	8.9	8.6	8.4	8.1	8.1	7.9	8.8	8.5	7.8	7.4
3	8.5	8.4	8.8	8.5	8.4	8.0	8.2	8.0	8.7	8.0	8.2	7.5
4	8.5	8.4	---	---	8.4	8.2	8.2	8.0	9.0	8.1	7.9	7.5
5	8.5	8.4	---	---	8.9	8.4	8.5	8.1	9.0	8.2	7.8	7.4
6	---	---	---	---	8.8	8.3	8.8	8.1	8.9	8.4	8.0	7.5
7	---	---	---	---	8.7	8.1	8.8	8.5	8.7	8.3	8.0	7.5
8	---	---	---	---	8.7	8.0	8.8	8.3	8.5	7.9	7.9	7.6
9	---	---	---	---	8.6	7.9	8.9	8.6	8.1	7.9	8.5	7.6
10	---	---	---	---	8.8	8.3	8.8	8.5	8.2	7.8	8.4	7.8
11	8.0	8.0	---	---	8.8	8.1	8.9	6.4	8.2	8.0	8.3	7.7
12	8.2	8.0	---	---	8.5	8.2	8.7	8.2	8.3	7.9	7.8	7.6
13	8.1	8.1	---	---	8.2	7.9	8.5	7.9	8.3	7.9	7.6	7.5
14	8.2	8.0	---	---	8.7	8.0	8.7	8.0	8.9	7.9	---	---
15	8.2	8.1	---	---	8.9	8.2	8.7	8.4	9.1	8.3	---	---
16	8.4	8.1	---	---	8.7	8.5	8.6	8.1	8.7	8.1	---	---
17	8.5	8.1	---	---	8.6	8.3	8.8	8.0	8.8	8.0	---	---
18	8.4	8.3	---	---	8.7	8.4	8.7	8.2	9.1	8.4	---	---
19	8.4	7.9	---	---	8.7	8.2	8.7	8.1	9.1	8.6	---	---
20	7.9	7.7	---	---	8.6	8.0	8.5	8.0	8.7	8.3	---	---
21	7.7	7.6	---	---	8.5	8.0	8.4	8.0	8.8	8.0	---	---
22	7.8	7.6	---	---	8.6	8.1	9.0	8.0	8.6	8.1	---	---
23	7.8	7.7	---	---	8.8	8.3	8.5	7.9	8.6	8.0	---	---
24	7.9	7.8	---	---	8.6	8.2	8.5	8.0	8.4	7.8	---	---
25	8.0	7.9	---	---	8.5	8.2	8.5	7.8	8.7	7.9	---	---
26	8.1	8.0	---	---	8.3	7.7	8.3	7.9	8.6	7.9	---	---
27	8.2	8.0	---	---	7.8	7.6	8.1	7.8	8.5	7.9	---	---
28	8.3	8.1	---	---	7.9	7.8	8.5	7.7	8.2	7.7	---	---
29	8.3	8.2	---	---	8.1	7.8	8.7	8.0	7.7	7.4	---	---
30	8.5	8.3	---	---	8.5	7.9	8.0	7.9	7.7	7.4	---	---
31	---	---	8.6	8.0	---	---	8.0	7.8	7.6	7.4	---	---
MONTH	8.5	7.6	8.9	8.0	8.9	7.6	9.0	7.7	9.1	7.4	8.5	7.4
YEAR	9.3	7.1										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04198005 SANDUSKY RIVER BELOW FREMONT, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	19.0	18.5	13.0	12.5	3.0	2.0	.5	.5	---	---	.5	.0
2	18.0	17.5	13.5	12.5	4.0	2.0	.5	.0	.0	.0	.5	.0
3	17.5	16.5	14.0	13.0	4.0	3.5	---	---	.5	.0	.5	.0
4	16.5	15.5	14.0	13.5	3.5	3.0	---	---	.5	.0	.5	.0
5	16.0	15.5	13.5	13.5	3.0	1.0	---	---	.5	.0	.5	.0
6	16.0	15.0	14.5	13.5	1.0	.0	---	---	.5	.0	.5	.0
7	15.5	15.0	14.5	14.0	---	---	---	---	.5	.0	.5	.0
8	15.5	15.0	15.0	14.0	---	---	---	---	.5	.0	.5	.0
9	15.0	13.5	15.0	14.5	---	---	---	---	.5	.5	.5	.0
10	13.5	12.5	15.0	12.5	---	---	---	---	.5	.0	.5	.0
11	13.5	12.0	12.0	7.5	---	---	---	---	.5	.0	.5	.0
12	11.5	10.5	8.0	7.0	---	---	---	---	.5	.5	.5	.0
13	11.5	10.5	7.0	5.5	.5	.0	---	---	.5	.5	.5	.5
14	11.5	10.5	5.5	5.0	.5	.0	---	---	.5	.5	.5	.0
15	11.5	10.5	5.5	5.0	.5	.0	---	---	.5	.0	.0	.0
16	10.5	10.0	6.5	5.5	1.0	.5	---	---	.5	.0	---	---
17	10.0	9.0	7.5	6.0	1.5	.5	---	---	.5	.0	---	---
18	10.0	8.5	6.5	5.5	3.0	1.5	---	---	.5	.0	---	---
19	10.0	9.5	5.5	5.0	4.0	3.0	.5	.0	.5	.0	---	---
20	11.0	9.5	7.0	5.5	4.5	4.0	.5	.0	.5	.0	---	---
21	11.5	10.5	7.5	6.5	4.0	2.5	.5	.0	.5	.0	1.5	1.0
22	11.5	11.0	6.5	5.5	2.5	1.0	.5	.0	.5	.0	2.5	1.0
23	11.5	11.0	6.0	5.5	2.0	1.0	.5	.0	.5	.0	3.0	2.5
24	12.5	11.0	6.0	5.5	2.5	1.0	.5	.0	.5	.0	3.0	2.5
25	12.5	11.5	5.5	4.5	2.5	1.0	.5	.0	.5	.0	2.5	2.0
26	13.0	12.0	4.5	1.5	---	---	.5	.0	.5	.0	2.0	2.0
27	13.5	12.5	1.5	1.0	---	---	.0	.0	.5	.0	2.0	2.0
28	13.5	12.5	1.0	.5	---	---	.0	.0	.5	.0	3.5	2.0
29	13.0	12.5	1.0	.5	---	---	---	---	---	---	4.5	3.0
30	13.0	12.5	1.0	1.0	.5	.5	---	---	---	---	5.5	4.0
31	13.0	12.5	---	---	.5	.5	---	---	---	---	7.5	5.0
MONTH	19.0	8.5	15.0	.5	4.5	.0	.5	.0	.5	.0	7.5	.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.5	7.5	14.0	13.0	26.5	24.0	28.0	26.0	26.0	25.0	24.5	23.5
2	9.0	7.5	15.0	12.5	26.0	24.5	26.0	23.0	26.0	25.0	25.5	23.5
3	9.5	7.0	15.5	13.5	24.5	23.5	23.0	20.5	26.5	25.0	26.5	24.0
4	9.0	8.5	15.0	13.5	23.5	22.5	20.5	19.5	26.5	24.5	25.5	24.0
5	10.0	8.5	13.0	11.5	24.0	22.0	22.0	20.0	25.5	24.5	25.0	23.5
6	---	---	12.0	11.5	23.5	22.5	25.0	21.5	25.5	24.5	25.5	24.0
7	---	---	12.5	11.0	23.5	22.5	26.0	23.5	25.0	24.5	25.5	24.0
8	---	---	13.0	11.5	23.5	22.5	26.5	24.5	24.5	23.0	26.0	24.5
9	---	---	14.0	12.5	23.5	22.0	26.5	26.0	24.0	22.0	26.5	25.0
10	---	---	15.0	13.5	25.0	22.5	26.5	25.5	25.5	23.0	26.5	25.0
11	12.0	11.0	16.0	13.5	25.0	22.5	26.5	25.0	25.0	23.0	26.5	25.5
12	12.5	10.5	16.0	15.0	24.0	22.5	25.5	24.5	25.5	23.0	25.5	24.5
13	12.0	11.0	16.0	15.5	22.5	21.0	25.5	24.0	25.5	24.0	24.5	24.0
14	11.5	10.5	16.0	15.0	22.0	19.5	26.5	24.5	27.0	25.0	---	---
15	11.5	10.5	15.0	14.5	22.0	19.5	27.0	25.5	27.5	25.5	---	---
16	12.0	10.0	15.5	14.0	21.5	20.5	27.5	26.5	26.5	25.5	---	---
17	12.0	10.0	17.5	15.0	23.5	21.0	28.0	25.5	26.5	24.5	---	---
18	12.0	9.5	19.0	16.0	25.0	23.0	27.0	26.5	27.0	25.5	25.5	24.5
19	10.5	9.5	20.0	17.0	26.5	24.0	28.0	26.0	27.5	26.0	26.0	24.0
20	10.0	8.5	20.0	18.0	26.0	25.0	27.5	26.5	27.0	25.0	27.5	25.0
21	8.5	7.5	19.5	17.5	26.0	25.0	28.5	27.0	27.0	24.5	26.0	25.0
22	8.0	6.5	18.0	16.5	26.5	24.5	30.0	27.5	26.5	25.0	25.0	23.5
23	8.0	7.0	17.5	16.5	27.0	25.0	29.0	27.5	27.0	25.5	24.0	23.0
24	9.5	8.0	19.0	16.5	27.0	25.5	28.0	27.0	26.5	25.5	24.0	22.5
25	10.0	9.0	21.5	17.5	26.5	25.5	28.0	26.5	26.5	25.5	22.5	21.5
26	11.0	9.0	22.0	19.5	25.5	21.0	28.0	26.5	26.5	25.5	22.5	21.0
27	13.0	10.0	22.5	20.0	24.5	21.0	27.5	26.5	26.5	25.5	22.0	20.5
28	14.0	11.5	23.5	21.0	25.5	23.0	27.0	26.0	26.5	25.5	21.0	20.0
29	15.0	13.5	26.0	22.0	26.5	24.0	27.0	26.0	26.0	25.0	20.5	19.5
30	15.5	14.0	25.0	24.0	28.0	26.0	26.0	25.0	25.5	24.5	20.0	19.0
31	---	---	25.5	24.0	---	---	25.5	24.5	25.0	24.0	---	---
MONTH	15.5	6.5	26.0	11.0	28.0	19.5	30.0	19.5	27.5	22.0	27.5	19.0
YEAR	30.0	.0										

04198005 SANDUSKY RIVER BELOW FREMONT, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	12.0	10.2	12.6	10.3	13.2	12.9	---	---	13.3	12.8
2	---	---	11.2	9.6	12.0	10.6	13.1	12.9	13.7	13.5	13.3	12.9
3	---	---	10.7	7.2	12.2	11.4	---	---	13.5	13.3	13.3	13.0
4	---	---	7.3	5.5	11.5	10.8	---	---	13.5	13.2	13.3	12.8
5	---	---	6.7	4.6	11.3	10.2	---	---	13.4	13.2	13.2	12.8
6	13.1	9.8	6.9	4.1	12.8	11.2	---	---	13.4	13.2	13.4	12.9
7	15.0	11.5	7.2	4.8	---	---	---	---	13.4	13.0	13.5	13.0
8	12.6	9.0	6.4	4.6	---	---	---	---	13.3	13.0	13.7	13.2
9	10.7	8.5	5.0	3.2	---	---	---	---	13.2	12.9	13.7	13.1
10	11.5	6.6	5.0	3.5	---	---	---	---	13.2	13.0	13.6	13.0
11	13.5	9.2	7.9	4.7	---	---	---	---	13.1	12.9	13.4	13.0
12	12.3	9.3	7.5	6.1	---	---	---	---	13.0	12.8	13.1	12.6
13	11.6	8.9	11.4	7.4	---	---	---	---	13.0	12.8	13.0	12.4
14	12.6	8.5	12.2	11.5	13.9	12.7	---	---	12.9	12.8	13.4	12.0
15	11.7	9.7	11.9	11.0	14.2	13.8	---	---	13.0	12.8	14.1	12.6
16	10.0	8.1	12.1	11.4	13.9	13.5	---	---	13.1	12.9	---	---
17	10.9	8.9	12.4	10.6	13.7	13.5	---	---	13.3	12.9	---	---
18	11.3	9.2	12.0	9.7	13.6	13.3	---	---	13.2	13.0	---	---
19	10.9	7.9	13.4	8.8	13.3	12.9	12.9	12.8	13.2	13.0	---	---
20	11.9	8.6	13.8	10.6	12.8	11.9	12.9	12.7	13.2	12.9	---	---
21	12.6	10.5	11.7	10.0	12.8	11.9	12.8	12.5	13.1	12.9	14.4	14.2
22	12.9	9.6	10.7	9.2	13.1	12.8	12.7	12.5	13.2	12.8	14.3	13.8
23	13.6	9.4	11.5	9.8	13.2	12.6	12.8	12.6	13.2	12.9	14.0	13.8
24	13.6	9.4	11.3	10.2	12.8	11.9	12.8	12.5	13.1	12.8	14.0	13.9
25	15.0	9.6	11.1	10.0	12.8	11.9	12.6	12.3	13.0	12.6	14.0	13.7
26	15.0	11.9	11.9	10.4	---	---	---	---	12.9	12.5	13.7	13.6
27	15.0	11.5	12.8	11.8	---	---	---	---	13.1	12.7	13.9	13.7
28	15.0	11.5	13.0	11.8	---	---	---	---	13.2	12.8	13.9	13.6
29	15.0	10.7	13.3	12.4	---	---	---	---	---	---	13.7	13.3
30	14.2	10.5	13.3	12.6	13.5	13.1	---	---	---	---	13.4	12.6
31	13.1	11.2	---	---	13.2	13.1	---	---	---	---	12.7	12.0
MONTH	15.0	6.6	13.8	3.2	14.2	10.2	13.2	12.3	13.7	12.5	14.4	12.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.9	11.2	14.1	11.0	7.4	3.7	9.0	6.5	11.1	5.0	4.0	2.1
2	12.0	11.4	19.0	12.1	6.0	4.0	6.0	4.5	11.9	8.7	7.4	3.2
3	12.0	11.4	19.4	14.0	7.3	3.9	7.4	4.8	10.3	4.4	10.7	3.7
4	11.7	11.5	19.3	14.9	7.6	6.4	9.0	7.3	13.9	5.7	8.8	4.1
5	11.7	11.4	14.3	10.2	13.6	6.8	10.3	7.6	12.2	6.8	7.7	3.1
6	---	---	12.1	10.0	14.7	9.8	14.6	7.3	11.9	7.1	9.7	3.8
7	---	---	13.7	11.0	16.3	8.0	12.3	8.6	9.5	6.1	9.3	4.0
8	---	---	12.7	10.7	13.2	5.1	11.8	7.4	7.6	3.6	9.0	4.6
9	---	---	10.5	9.3	14.5	4.5	14.4	9.3	7.1	6.3	14.1	5.7
10	---	---	9.6	8.2	16.3	9.6	14.9	7.9	8.1	5.1	11.8	7.0
11	10.4	10.1	11.6	10.0	13.7	5.6	16.8	11.3	7.6	6.2	11.5	6.2
12	10.8	10.1	11.3	8.7	10.1	5.0	14.4	9.9	8.7	6.0	6.8	3.6
13	10.7	10.1	9.5	7.9	5.2	3.1	15.8	7.6	8.1	5.2	3.6	2.5
14	11.4	10.4	11.0	8.6	18.1	4.6	12.2	6.3	11.7	5.9	---	---
15	11.7	10.3	10.8	8.9	18.4	8.3	16.1	9.9	13.8	10.2	---	---
16	11.9	10.7	12.8	10.1	13.8	11.0	13.8	10.7	---	---	---	---
17	12.8	11.5	12.2	10.2	12.1	9.1	15.1	8.1	---	---	---	---
18	12.2	11.0	13.9	8.3	12.8	7.6	13.6	7.8	---	---	9.0	4.6
19	11.3	10.6	11.4	8.1	13.2	6.5	10.9	7.1	---	---	13.6	4.0
20	11.8	11.2	8.4	4.9	13.0	6.3	9.6	5.2	---	---	14.4	6.4
21	12.3	11.8	8.3	3.8	9.9	4.6	8.2	5.0	---	---	9.3	4.0
22	12.6	12.2	8.1	7.4	11.7	5.2	14.0	5.7	---	---	7.0	3.1
23	12.3	11.9	8.1	6.2	12.7	8.7	9.3	4.7	14.2	7.5	7.9	4.3
24	11.9	11.5	10.0	7.0	10.7	7.9	8.6	5.8	12.4	6.3	7.8	3.1
25	11.5	11.2	11.3	7.1	8.5	6.4	9.2	3.9	16.2	6.8	7.0	3.0
26	11.4	10.9	11.6	7.4	7.7	4.1	8.2	4.3	14.0	7.3	10.2	2.7
27	10.9	10.6	9.4	7.5	7.9	6.6	6.9	3.3	13.1	6.5	8.6	3.9
28	10.9	10.1	8.4	6.5	6.8	6.2	9.6	1.8	9.9	6.4	5.1	3.1
29	10.8	9.8	7.9	5.9	6.6	5.1	11.1	5.7	6.2	2.5	7.8	2.1
30	11.3	9.7	6.9	5.2	9.3	5.3	5.8	4.1	5.8	2.5	5.5	2.3
31	---	---	7.8	1.6	---	---	5.9	3.8	4.8	2.2	---	---
MONTH	12.8	9.7	19.4	1.6	18.4	3.1	16.8	1.8	16.2	2.2	14.4	2.1
YEAR	19.4	1.6										

04198005 SANDUSKY RIVER BELOW FREMONT, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM-FLOW (CFS)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
DEC									
02...	1300	3190	3190	700	8.1	4.0	3.5	11.1	83
15...	1230	15900	15900	310	7.8	3.0	.5	13.9	96
MAR									
17...	1515	27600	27600	220	7.7	1.0	2.0	13.4	97
28...	1415	8700	8700	355	7.8	13.0	6.0	13.2	106
29...	1250	8450	8450	360	7.8	9.5	6.5	12.6	102
31...	0800	4000	4000	400	7.7	8.5	6.0	12.6	101
31...	1400	3580	3580	420	7.9	20.0	9.5	12.4	108
APR									
20...	1100	7810	7810	400	7.7	7.0	9.5	9.2	80
21...	0900	10000	10000	340	7.7	4.0	8.0	11.9	100
24...	1130	3580	3580	420	7.8	18.5	8.5	11.9	100
25...	1300	2160	2160	500	7.9	13.0	11.0	11.4	100

DATE	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)
DEC									
02...	44	42	6.2	481	136	617	5.8	.12	.41
15...	74	19	3.6	191	600	799	1.1	.12	.77
MAR									
17...	40	14	3.1	161	195	356	2.3	.49	.41
28...	40	18	5.7	274	198	472	4.6	.21	.27
29...	35	17	6.1	225	197	422	4.6	.22	.27
31...	25	18	6.8	312	91	403	4.4	.15	.19
31...	25	18	6.5	278	120	398	4.5	.11	.19
APR									
20...	75	19	4.7	260	522	782	4.1	.31	.65
21...	60	18	5.3	235	377	612	4.3	.30	.45
24...	35	21	6.6	290	154	444	5.3	.08	.23
25...	25	23	6.9	307	129	436	5.1	.06	.16

DATE	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	ARSENIC TOTAL (UG/L AS AS)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)
DEC								
02...	.13	.40	1	1	20	11	11	<.5
15...	.10	.31	1	0	30	26	24	<.5
MAR								
17...	.18	.55	1	2	<10	23	15	<.5
28...	--	--	1	0	20	12	21	<.5
29...	.01	.03	1	2	20	11	27	<.5
31...	.19	.58	1	0	10	8	12	<.5
31...	.12	.37	1	1	10	7	18	<.5
APR								
20...	.21	.64	2	0	10	21	220	<.5
21...	.33	1.0	3	4	20	20	96	<.5
24...	.14	.43	2	1	<10	10	64	<.5
25...	.16	.49	2	0	<10	0	0	<.5

04199000 HURON RIVER AT MILAN, OH

LOCATION.--Lat 41°18'06", long 82°36'25", in SW 1/4 sec. 4, T.5 N., R.22 W., Erie County, Hydrologic Unit 04100012, on right bank 500 ft (152 m) downstream from bridge on U.S. Highway 250, 0.2 mi (0.3 km) northwest of Milan and 2.0 mi (3.2 km) downstream from confluence of East and West Branches.

DRAINAGE AREA.--371 mi² (961 km²).

PERIOD OF RECORD.--March 1950 to current year.

REVISED RECORDS.--WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 573.26 ft (174.730 m) National Geodetic Vertical Datum of 1929. Prior to July 29, 1953, nonrecording gage at site of former highway bridge 45 ft (14 m) upstream at same datum.

REMARKS.--Records good except those for winter periods or no gage-height record, which are fair. Water-quality data collected at this site 1969 to 1974. Sediment data collected 1970 to 1974.

AVERAGE DISCHARGE.--28 years, 300 ft³/s (8.496 m³/s), 10.98 in/yr (279 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,600 ft³/s (1,400 m³/s) July 5, 1969, gage height, 31.1 ft (9.48 m) (from floodmark), from rating curve extended above 11,000 ft³/s (312 m³/s) on basis of contracted-opening measurement of peak flow; minimum, 2.2 ft³/s (0.062 m³/s) Sept. 10, 15, 19, 20, 21, 1955.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 4,700 ft³/s (133 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 15	0400	*11600	329	*20.53	6.258	Mar. 21	unknown	unknown		unknown	
Mar. 16	0600	7550	214	17.92	5.462						

Minimum daily discharge, 9.0 ft³/s (0.255 m³/s) Sept. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	40	1080	310	1200	140	520	140	152	119	23	27
2	61	41	1210	280	700	140	460	125	123	186	21	26
3	60	41	472	260	500	140	760	115	102	364	37	25
4	57	42	331	240	450	140	1300	105	90	247	42	23
5	54	42	336	220	400	140	1100	130	86	163	36	21
6	53	42	350	220	360	140	1250	133	77	117	32	16
7	50	55	370	230	330	140	820	114	76	89	104	15
8	66	57	390	1250	300	140	460	104	80	71	652	15
9	133	98	440	1100	280	140	290	98	80	57	324	14
10	231	120	480	940	270	140	310	98	72	57	643	13
11	161	101	520	800	260	140	350	98	60	51	411	13
12	116	99	620	700	240	160	400	98	62	43	184	23
13	93	80	751	600	230	946	240	169	80	39	99	28
14	77	68	5700	520	220	2950	160	392	120	392	72	22
15	70	63	9160	450	210	6700	130	312	95	127	57	45
16	63	67	3330	380	200	7270	100	275	72	71	47	33
17	59	127	2030	340	190	5830	210	257	62	52	39	32
18	55	295	1570	300	185	4000	450	302	56	41	34	28
19	55	198	1140	270	175	1900	800	252	63	34	30	30
20	55	120	800	260	170	3700	2500	292	54	30	26	16
21	53	105	560	260	165	4400	1800	457	52	29	24	14
22	51	96	430	270	160	2900	1200	361	47	28	22	16
23	48	88	414	320	155	1700	700	275	39	47	21	14
24	48	82	399	660	150	1100	520	285	34	76	21	15
25	46	80	1780	1000	150	680	400	334	34	48	20	14
26	44	78	782	1820	145	1400	330	262	1480	41	21	21
27	44	78	580	2200	145	2300	250	202	1330	61	21	11
28	43	78	500	2460	140	1400	220	171	500	76	21	10
29	41	86	450	2570	---	840	185	146	275	40	21	9.0
30	40	110	390	2260	---	470	160	169	167	30	25	10
31	40	---	350	1700	---	430	---	213	---	26	32	---
TOTAL	2123	2677	37715	25130	8080	52616	18375	6484	5620	2852	3162	599.0
MEAN	68.5	89.2	1217	811	289	1697	613	209	187	92.0	102	20.0
MAX	231	295	9160	2570	1200	7270	2500	457	1480	392	652	45
MIN	40	40	331	220	140	140	100	98	34	26	20	9.0
CFSM	.19	.24	3.28	2.19	.78	4.57	1.65	.56	.50	.25	.28	.05
IN.	.21	.27	3.78	2.52	.81	5.28	1.84	.65	.56	.29	.32	.06

CAL YR 1977 TOTAL 141966.0 MEAN 389 MAX 9160 MIN 19 CFSM 1.05 IN 14.23
WTR YR 1978 TOTAL 165433.0 MEAN 453 MAX 9160 MIN 9.0 CFSM 1.22 IN 16.59

Note: No Gage-Height Record Mar. 18 to Apr. 27.

04199100 HURON RIVER BELOW MILAN, OH

LOCATION.--Lat 41°20'06", long 82°34'38", in SW 1/4 sec. 2, T.5 N., R.22 W., Erie County, Hydrologic Unit 04100012, on right bank at downstream side of bridge on Mason Road, 3.5 mi (5.6 km) northeast of Milan, and 4.2 mi (6.8 km) downstream from the discharge station at Milan.

DRAINAGE AREA.--385 mi² (997 km²).

PERIOD OF RECORD.--Water year 1968 to 1978 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1968 to September 1978 (discontinued).
pH: June 1968 to September 1978 (discontinued).
WATER TEMPERATURES: June 1968 to September 1978 (discontinued).
DISSOLVED OXYGEN: June 1968 to September 1978 (discontinued).

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Dissolved oxygen concentrations listed as 15.0 mg/L represent concentrations of 15.0 mg/L or higher due to instrument limitations prior to March 29, 1978; 20.0 mg/L limitation thereafter. See records of daily discharge for station at Milan (station 04199000).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,380 micromhos Feb. 13, 1977; minimum, 141 micromhos Jan. 26, 1976.
pH: Maximum, 9.8 units July 21, 1978; minimum, 4.3 units Dec. 10, 1971.
WATER TEMPERATURES: Maximum, 30.0°C July 23, 1972; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 19.8 mg/L July 13; minimum 1.6 mg/L Nov. 4, 1974.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,080 micromhos Dec. 10; minimum, 162 micromhos Mar. 15, 16.
pH: Maximum recorded, 9.8 units July 21; minimum recorded, 7.0 units Jan. 8.
WATER TEMPERATURES: Maximum 29.5°C July 22, 23; minimum, 0.0°C on many days during winter period.
DISSOLVED OXYGEN: Maximum, 19.8 mg/L July 13; minimum, 1.9 mg/L Oct. 24.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	795	768	870	855	747	465	714	639	---	---	804	780
2	804	795	867	840	492	438	717	663	---	---	813	780
3	825	783	882	864	552	474	741	690	558	528	810	783
4	786	750	897	882	615	507	768	708	573	540	810	783
5	798	777	897	891	645	570	753	720	579	564	825	801
6	825	798	894	885	663	573	744	693	624	573	807	792
7	816	801	888	873	690	633	759	723	624	600	822	783
8	810	780	846	843	705	630	744	498	654	624	810	792
9	804	732	849	825	834	660	474	336	681	642	822	795
10	768	729	912	852	1080	648	444	390	705	660	813	780
11	762	735	---	---	696	660	489	444	711	684	822	804
12	732	711	---	---	708	678	513	477	711	690	864	810
13	714	693	---	---	714	654	546	498	723	702	852	780
14	735	717	---	---	720	228	609	543	750	717	765	210
15	762	729	---	---	246	210	609	570	762	720	204	162
16	777	756	807	798	357	252	615	582	750	738	201	162
17	780	756	813	759	390	342	621	597	771	741	252	201
18	783	765	804	741	411	375	636	588	777	750	300	252
19	798	780	804	708	480	390	690	612	783	750	321	300
20	816	795	705	681	495	468	690	636	783	750	300	243
21	825	789	705	678	492	438	687	648	783	750	252	210
22	807	795	729	708	534	480	696	663	804	771	264	210
23	819	804	753	729	570	537	738	678	804	777	300	264
24	813	801	759	750	585	558	717	678	792	780	372	300
25	822	804	774	750	609	351	738	675	786	777	438	375
26	831	819	---	---	468	360	732	717	792	780	450	420
27	843	828	---	---	510	465	---	---	801	783	420	324
28	852	831	---	---	582	510	---	---	801	780	390	330
29	864	846	720	684	606	567	---	---	---	---	414	384
30	876	855	747	693	651	597	---	---	---	---	492	405
31	873	858	---	---	663	615	---	---	---	---	507	492
MONTH	876	693	912	678	1080	210	768	336	804	528	864	162

04199100 HURON RIVER BELOW MILAN, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	501	474	666	524	651	591	657	645	699	668	837	819
2	495	477	669	530	684	654	672	654	723	699	855	831
3	513	495	678	633	711	675	669	567	723	708	849	819
4	516	477	678	554	720	708	648	618	750	723	837	795
5	492	453	643	560	729	702	678	651	783	747	828	798
6	504	471	711	584	756	720	702	684	765	747	831	807
7	459	411	735	705	750	720	714	702	768	726	840	822
8	501	435	732	699	729	720	717	654	756	405	849	834
9	546	507	729	702	753	720	699	633	474	429	864	846
10	570	549	717	672	768	744	675	648	474	351	891	864
11	600	570	720	561	777	750	693	657	540	414	912	897
12	597	570	723	640	774	750	699	642	507	450	918	879
13	603	579	717	540	783	774	708	654	543	510	957	909
14	609	573	702	603	783	741	741	309	570	543	966	912
15	630	615	621	503	801	771	498	375	582	567	927	807
16	675	636	621	600	804	774	567	495	618	579	819	780
17	690	657	609	600	789	747	603	570	624	585	825	801
18	702	687	609	549	753	735	624	609	612	588	810	777
19	687	432	597	570	747	714	633	603	609	588	801	783
20	492	402	612	585	735	647	645	621	636	612	816	804
21	429	402	603	519	705	684	663	633	666	633	816	795
22	477	432	612	573	711	669	693	666	699	672	822	801
23	525	480	630	609	723	681	723	681	714	690	837	801
24	573	528	633	621	720	687	738	720	714	693	861	807
25	591	573	630	612	723	681	735	627	741	708	858	831
26	600	582	654	630	729	351	630	606	777	744	876	840
27	624	597	657	630	495	363	687	615	795	771	876	843
28	633	615	651	627	585	498	732	690	822	801	876	[illegible]46
29	645	618	660	639	621	588	667	594	840	828	891	846
30	657	624	666	636	642	627	630	603	852	837	885	858
31	---	---	660	519	---	---	663	624	849	816	---	---
MONTH	702	402	735	519	804	351	741	309	852	351	966	777
YEAR	1060	162										

04199100 HURON RIVER BELOW MILAN, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.0	8.0	7.9	7.8	---	---	7.8	7.7	---	---	7.7	7.6
2	8.1	8.0	7.8	7.8	---	---	7.8	7.7	---	---	7.8	7.6
3	8.1	8.0	7.8	7.8	---	---	7.8	7.7	7.7	7.1	7.8	7.8
4	8.1	8.0	7.8	7.8	---	---	7.8	7.6	7.7	7.4	7.8	7.8
5	8.1	8.1	7.8	7.7	---	---	7.7	7.6	7.6	7.5	7.8	7.7
6	8.1	8.0	7.7	7.6	---	---	7.8	7.6	7.6	7.5	7.8	7.8
7	8.1	8.0	7.7	7.6	---	---	7.6	7.2	7.6	7.5	7.9	7.8
8	8.1	8.1	7.6	7.5	---	---	7.9	7.0	7.6	7.2	7.9	7.8
9	8.1	7.9	7.7	7.6	---	---	7.8	7.7	---	---	7.9	7.8
10	8.3	8.0	8.1	7.7	---	---	7.7	7.6	---	---	7.9	7.8
11	8.4	8.1	---	---	---	---	7.7	7.6	---	---	7.9	7.8
12	8.2	8.1	---	---	---	---	7.7	7.5	---	---	8.1	7.9
13	8.4	8.1	---	---	---	---	7.6	7.3	---	---	8.2	8.1
14	8.4	8.2	---	---	---	---	7.7	7.5	---	---	---	---
15	8.4	8.3	---	---	---	---	7.7	7.5	---	---	---	---
16	8.3	8.3	8.2	8.2	---	---	7.7	7.5	---	---	---	---
17	8.3	8.2	8.2	7.9	---	---	7.7	7.5	---	---	---	---
18	8.3	8.2	8.3	8.1	---	---	7.7	7.4	---	---	---	---
19	8.3	8.2	8.3	8.2	---	---	7.7	7.6	---	---	---	---
20	8.2	8.1	8.4	8.0	---	---	7.7	7.6	---	---	---	---
21	8.1	7.9	8.2	7.9	---	---	7.7	7.5	---	---	---	---
22	7.9	7.8	8.4	7.9	---	---	7.7	7.6	---	---	---	---
23	7.9	7.9	8.5	8.1	---	---	7.7	7.5	7.8	7.5	---	---
24	8.0	7.5	8.1	8.0	---	---	7.6	7.5	7.7	7.6	---	---
25	7.6	7.5	8.5	8.0	---	---	7.7	7.4	7.7	7.6	---	---
26	7.6	7.5	---	---	---	---	7.5	7.4	7.7	7.6	---	---
27	7.8	7.6	---	---	---	---	---	---	7.8	7.6	---	---
28	7.8	7.7	---	---	7.6	7.6	---	---	7.8	7.6	---	---
29	7.9	7.7	---	---	7.7	7.6	---	---	---	---	---	---
30	7.9	7.9	---	---	7.8	7.6	---	---	---	---	---	---
31	7.9	7.8	---	---	7.8	7.7	---	---	---	---	---	---
MONTH	8.4	7.5	8.5	7.5	7.8	7.6	7.9	7.0	7.8	7.1	8.2	7.6

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	8.6	8.4	8.1	7.8	8.3	8.1			---	---
2	---	---	8.8	8.5	8.4	7.9	8.3	8.1			---	---
3	---	---	8.9	8.5	8.4	8.0	8.3	8.1			---	---
4	---	---	8.7	8.4	8.5	8.2	8.3	8.2			---	---
5	---	---	8.6	8.2	8.5	8.2	8.4	8.3			---	---
6	---	---	8.4	8.2	8.2	8.2	8.6	8.3			---	---
7	---	---	8.6	8.3	8.2	8.2	9.0	8.4			8.8	8.7
8	---	---	8.7	8.4	8.2	8.1	9.4	8.7			8.8	8.6
9	---	---	8.4	8.2	8.3	8.0	9.4	9.0			8.7	8.6
10	---	---	8.6	8.2	8.5	8.1	9.2	8.8			8.7	8.4
11	---	---	8.7	8.3	8.6	8.2	9.6	9.0			8.6	8.4
12	---	---	8.5	8.2	8.5	8.3	9.6	9.2			8.4	8.1
13	---	---	8.2	8.0	8.3	8.0	9.6	9.2			8.2	8.0
14	8.2	8.2	8.4	8.0	8.4	7.9	9.5	8.0			8.0	7.8
15	8.2	8.2	8.3	8.1	8.6	8.3	8.2	8.0			7.8	7.7
16	8.3	8.2	8.5	8.2	8.5	8.4	8.4	8.1			7.7	7.6
17	8.3	8.2	8.7	8.2	8.6	8.3	9.1	8.2			7.7	7.6
18	8.4	8.2	8.7	7.9	8.9	8.4	9.0	8.4			7.8	7.6
19	8.3	7.9	8.6	8.0	9.0	8.5	9.2	8.7			8.0	7.7
20	8.1	7.9	8.7	8.0	8.9	8.4	9.4	8.8			8.1	7.7
21	8.0	7.9	8.4	7.8	8.7	8.3	9.8	8.7			8.2	7.7
22	8.1	8.0	8.3	8.0	9.2	8.3	9.7	9.2			8.1	7.8
23	8.1	8.0	8.6	8.0	9.2	8.7	9.4	9.1			8.4	8.0
24	8.3	8.1	8.3	7.9	9.3	8.8	9.2	8.7			8.8	8.2
25	8.4	8.2	8.4	7.9	9.3	8.9	8.9	8.2			8.6	8.3
26	8.4	8.2	8.4	7.9	9.1	7.8	8.9	8.3			8.7	8.4
27	8.4	8.2	8.4	7.9	7.9	7.7	8.8	8.5			8.7	8.4
28	8.4	8.2	8.3	7.9	8.0	7.9	9.2	8.5			8.6	8.4
29	8.5	8.3	8.3	7.9	8.1	7.9	8.8	8.2			8.6	8.4
30	8.7	8.4	8.3	7.9	8.2	8.1	8.5	8.2			8.4	8.2
31	---	---	8.1	7.6	---	---	9.0	8.4			---	---
MONTH	8.7	7.9	8.9	7.6	9.3	7.7	9.8	8.0			8.8	7.6
YEAR	9.8	7.0										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04199100 HURON RIVER BELOW MILAN, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	19.0	18.0	12.5	12.0	5.5	1.0	.0	.0	---	---	.5	.0
2	18.0	17.5	13.5	12.0	5.5	4.5	.0	.0	---	---	.5	.0
3	17.5	16.0	14.5	13.0	4.5	3.5	.0	.0	.5	.5	.5	.0
4	16.5	15.0	15.0	14.5	3.5	2.0	.0	.0	.5	.0	.5	.0
5	15.5	15.0	15.5	14.5	2.0	.5	.0	.0	.5	.5	.5	.0
6	16.5	15.0	16.5	15.5	.5	.5	.0	.0	.5	.0	.5	.0
7	15.5	15.0	16.5	16.0	.5	.5	.0	.0	.5	.0	.5	.0
8	15.0	15.0	16.5	16.5	.5	.5	.0	.0	.5	.0	.0	.0
9	15.0	13.0	17.0	16.0	.5	.0	.0	.0	.5	.0	.5	.0
10	13.0	11.5	17.0	13.0	.5	.0	.0	.0	.5	.0	.5	.0
11	13.0	11.5	---	---	.5	.5	.0	.0	.5	.0	.5	.5
12	11.0	10.5	---	---	.5	.5	.0	.0	.5	.0	.5	.5
13	11.5	10.0	---	---	.5	.5	.0	.0	.5	.0	.5	.5
14	12.0	10.0	---	---	.5	.0	.0	.0	.5	.0	.5	.0
15	11.5	10.0	---	---	1.0	.5	.0	.0	.5	.0	.5	.5
16	11.0	10.0	7.0	7.0	3.0	1.0	.0	.0	.5	.0	.5	.5
17	10.5	9.0	9.0	7.0	4.0	2.5	.0	.0	.5	.0	.5	.5
18	10.0	9.0	8.0	6.0	5.0	4.0	.0	.0	.5	.0	.5	.5
19	11.0	10.0	6.0	5.5	5.5	5.0	.0	.0	.5	.0	.5	.5
20	12.0	10.5	7.5	6.0	5.5	4.0	.0	.0	.5	.0	1.0	.5
21	12.0	10.5	9.5	8.0	4.0	2.0	.0	.0	.5	.0	1.5	1.0
22	12.5	11.5	8.5	6.0	2.0	1.0	.0	.0	.5	.0	3.5	1.0
23	12.0	12.0	6.0	5.5	1.5	.5	.0	.0	.5	.5	3.5	3.0
24	13.0	12.0	6.5	5.0	3.0	1.0	.0	.0	.5	.0	3.5	2.0
25	12.5	12.0	6.5	5.0	3.5	.5	.0	.0	.5	.5	2.5	1.5
26	14.0	12.5	---	---	3.0	.5	.0	.0	.5	.0	3.0	2.0
27	15.0	14.0	---	---	.5	.5	---	---	.5	.0	2.5	2.0
28	15.0	14.0	---	---	.5	.0	---	---	.5	.0	5.5	2.0
29	14.5	13.5	1.5	1.0	.0	.0	---	---	---	---	8.0	4.0
30	14.0	13.0	1.0	1.0	.0	.0	---	---	---	---	7.5	3.5
31	13.0	12.0	---	---	.0	.0	---	---	---	---	10.5	8.0
MONTH	19.0	9.0	17.0	1.0	5.5	.0	.0	.0	.5	.0	10.5	.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	13.5	9.5	16.0	12.5	25.5	24.0	27.0	26.0	26.5	25.5	25.5	24.0
2	12.0	7.0	16.0	12.5	26.0	24.5	25.5	21.0	27.0	26.0	27.0	24.0
3	10.5	6.0	17.0	13.0	25.5	24.0	21.0	20.0	27.0	26.0	26.0	24.0
4	11.5	8.5	14.5	13.5	24.0	22.0	21.5	20.5	27.0	26.0	25.5	24.5
5	12.5	10.0	14.0	11.0	23.0	21.5	22.5	21.0	26.5	25.0	26.0	24.0
6	11.5	9.0	11.5	11.0	23.0	21.5	26.0	22.5	26.0	25.0	27.5	24.5
7	12.5	8.5	13.0	10.5	23.0	22.5	26.5	24.0	25.0	23.5	26.5	25.0
8	12.0	10.0	14.5	12.0	23.5	22.5	29.0	26.0	25.0	21.5	27.5	26.0
9	10.5	8.0	16.0	14.0	23.5	22.0	28.0	27.0	25.0	23.5	27.5	26.5
10	14.0	7.5	16.5	15.0	25.0	22.0	27.5	26.5	25.5	23.0	27.5	26.0
11	15.0	13.0	17.0	14.5	25.0	23.0	26.5	25.0	25.0	22.0	28.0	26.5
12	15.0	10.5	18.5	16.0	25.0	24.0	25.5	24.0	24.5	23.0	27.0	26.0
13	15.0	11.5	18.0	17.0	24.0	22.5	25.5	24.0	27.0	24.0	26.0	25.0
14	11.5	9.5	17.0	15.5	22.5	19.5	25.0	22.5	27.5	25.0	25.0	24.5
15	12.5	10.5	15.0	14.0	21.0	19.0	26.5	24.5	28.0	26.0	25.0	24.0
16	13.0	10.5	15.5	14.5	21.5	20.5	27.0	25.0	28.0	26.5	24.5	23.5
17	13.0	10.5	17.0	15.5	24.0	21.5	27.5	25.5	28.5	26.5	25.0	24.0
18	12.0	9.5	19.0	16.5	26.0	24.0	27.0	25.5	28.5	27.5	26.0	25.0
19	11.5	9.0	21.5	19.0	27.5	25.5	27.0	25.5	29.5	27.5	27.0	25.5
20	11.5	9.0	23.0	21.5	28.5	26.5	27.5	26.0	28.0	27.0	28.0	26.0
21	9.0	7.5	22.5	17.0	28.0	27.0	29.0	27.0	28.0	26.5	28.0	26.5
22	10.5	6.0	17.0	15.5	28.0	26.0	29.5	28.0	27.5	26.0	26.5	24.5
23	10.0	8.0	19.0	16.5	27.5	26.0	29.5	28.5	27.5	26.0	25.0	23.5
24	12.5	8.5	18.5	16.5	27.0	25.5	28.5	27.5	27.5	26.5	24.5	22.5
25	12.0	10.0	21.0	18.5	27.0	26.0	27.5	26.0	27.5	26.5	23.5	22.5
26	13.5	10.0	22.5	21.5	26.0	21.5	28.0	25.5	27.0	26.0	23.0	21.5
27	14.0	12.5	24.5	21.5	25.5	22.5	27.5	26.5	27.0	26.0	22.0	20.5
28	15.5	14.0	25.0	23.0	26.5	24.0	29.0	26.5	27.5	26.0	21.5	20.5
29	17.0	15.0	26.5	24.0	26.5	25.5	27.0	25.5	27.5	26.0	21.0	19.5
30	17.5	14.0	27.0	25.0	28.0	27.0	26.5	25.0	26.5	25.0	20.0	19.0
31	---	---	25.5	23.5	---	---	27.0	25.0	26.0	24.5	---	---
MONTH	17.5	6.0	27.0	10.5	28.5	19.0	29.5	20.0	29.5	21.5	28.0	19.0
YEAR	29.5	.0										

041991000 HURON RIVER BELOW MILAN, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.9	8.2	7.2	6.0	11.9	10.9	12.4	12.2	---	---	10.5	10.4
2	8.3	7.8	7.4	6.3	11.7	11.4	12.3	11.9	---	---	10.6	10.4
3	8.8	7.4	7.7	6.8	11.9	11.6	12.3	12.0	11.7	11.3	10.5	10.3
4	9.1	8.2	7.0	5.5	12.3	11.7	12.4	11.9	11.5	11.2	10.4	10.2
5	9.1	8.5	6.6	5.2	12.3	12.1	12.2	11.8	11.3	11.1	10.4	10.2
6	9.1	8.7	5.0	3.7	12.4	12.1	12.1	12.0	11.3	11.2	10.4	10.2
7	9.5	8.4	5.3	4.4	12.6	12.4	12.2	12.0	11.3	10.9	10.4	10.2
8	9.7	8.8	2.6	2.4	12.9	12.5	12.8	12.1	11.1	10.8	10.5	10.3
9	9.6	8.2	5.3	2.7	12.7	9.5	13.0	12.8	11.1	10.8	11.5	10.2
10	11.0	8.9	8.2	5.4	11.4	9.3	12.8	12.3	11.1	10.8	11.4	11.2
11	11.0	9.3	---	---	12.5	11.5	12.6	12.4	11.0	10.8	11.3	11.1
12	10.1	9.6	---	---	12.8	12.3	12.6	12.4	11.0	10.8	11.9	11.0
13	11.2	9.9	---	---	12.6	12.3	12.4	12.1	11.0	10.6	12.4	12.0
14	11.4	10.0	---	---	13.3	12.6	12.1	11.9	10.8	10.6	13.6	12.4
15	11.4	10.1	---	---	13.2	12.2	12.0	11.8	10.8	10.5	14.1	13.6
16	11.1	10.1	10.4	10.2	13.2	12.2	12.0	11.7	10.7	10.6	14.0	13.7
17	10.8	9.8	10.1	7.4	12.4	11.6	12.0	11.7	10.7	10.6	13.8	13.4
18	11.0	10.3	10.7	9.7	11.7	11.4	11.8	11.6	10.8	10.6	13.7	13.3
19	10.9	9.8	10.9	10.1	11.6	11.1	11.7	11.5	10.9	10.6	13.5	12.6
20	9.6	7.6	11.1	9.6	12.8	11.4	11.7	11.4	10.8	10.5	13.8	13.2
21	8.2	7.2	10.0	7.7	12.5	12.0	11.4	11.2	10.7	10.5	13.5	13.4
22	7.5	6.1	10.0	7.8	12.7	12.5	11.3	11.1	10.7	10.5	---	---
23	7.7	7.1	11.7	9.5	12.6	12.2	11.2	11.1	10.6	10.4	---	---
24	8.9	1.9	10.0	8.8	12.2	12.0	11.3	11.0	10.5	10.3	---	---
25	3.2	2.1	11.3	9.0	12.4	11.4	11.3	11.0	10.4	10.2	---	---
26	4.3	2.0	---	---	12.8	12.3	11.0	11.0	10.2	10.1	---	---
27	6.9	4.8	---	---	12.7	12.5	---	---	10.4	10.1	---	---
28	7.1	5.9	---	---	12.8	12.4	---	---	10.5	10.3	---	---
29	7.6	5.9	13.4	7.6	12.8	12.5	---	---	---	---	---	---
30	8.0	7.1	12.9	11.7	12.6	12.4	---	---	---	---	---	---
31	7.8	6.5	---	---	12.5	12.3	---	---	---	---	---	---
MONTH	11.4	1.9	13.4	2.4	13.3	9.3	13.0	11.0	11.7	10.1	14.1	10.2

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	12.0	10.5	6.7	4.9	7.7	6.2	---	---	---	---
2	---	---	12.6	10.9	8.5	4.9	7.1	5.8	11.8	9.1	---	---
3	---	---	13.3	10.7	9.5	5.1	7.4	6.6	10.8	7.7	---	---
4	---	---	12.9	9.4	10.8	6.9	7.4	6.9	11.9	7.8	---	---
5	---	---	11.4	9.0	9.5	7.7	8.0	7.0	11.9	8.8	---	---
6	10.7	10.6	10.5	9.2	8.5	7.0	9.6	7.8	13.8	9.0	---	---
7	11.0	10.0	12.1	10.2	7.7	6.8	12.6	8.0	11.0	7.8	16.4	13.5
8	10.7	10.0	12.8	9.2	7.4	6.0	19.1	9.4	7.5	5.6	16.6	13.5
9	11.0	10.2	10.3	8.9	7.6	5.6	19.1	12.8	6.9	6.6	13.8	11.7
10	10.8	9.7	10.3	9.2	9.9	6.4	16.6	13.7	7.1	6.2	13.3	10.4
11	9.8	8.9	11.6	9.3	10.2	6.9	19.0	12.8	7.3	7.0	13.8	9.6
12	10.5	9.5	11.1	7.5	9.0	7.2	19.5	13.3	7.1	6.3	10.4	6.7
13	10.3	9.2	9.0	7.2	7.2	5.1	19.8	14.8	8.0	6.1	7.3	5.7
14	11.4	10.0	9.2	8.1	9.3	4.0	15.9	5.6	8.6	6.0	6.8	5.4
15	11.4	10.1	10.1	8.7	10.5	7.9	6.2	5.2	9.7	7.2	6.0	4.7
16	11.6	10.1	10.9	9.0	9.7	8.1	7.4	5.3	13.9	10.4	5.8	4.9
17	11.7	10.7	11.1	9.0	10.0	7.9	11.4	5.9	---	---	5.6	4.3
18	11.9	9.9	11.1	8.1	13.6	8.4	11.4	7.1	---	---	6.7	4.2
19	11.2	10.1	---	---	13.9	10.1	15.3	11.6	---	---	8.2	4.8
20	10.8	10.1	---	---	12.7	8.5	18.7	11.9	---	---	7.3	5.2
21	11.3	10.8	---	---	10.2	6.3	16.5	11.1	---	---	7.8	4.9
22	11.7	10.6	---	---	14.1	5.7	14.3	11.1	---	---	8.6	5.0
23	11.3	10.6	---	---	15.9	10.4	14.2	9.8	---	---	11.3	6.7
24	11.3	10.6	---	---	17.6	11.7	11.6	7.9	---	---	15.2	8.4
25	11.4	10.2	---	---	16.6	12.5	7.9	3.2	---	---	12.6	9.1
26	11.4	10.3	---	---	12.7	5.0	10.6	4.3	---	---	13.3	9.4
27	11.4	9.6	---	---	7.3	6.6	9.2	7.2	---	---	14.2	9.6
28	11.6	9.2	---	---	6.9	6.4	7.6	6.6	---	---	12.6	9.8
29	11.7	9.2	---	---	6.6	5.9	---	---	---	---	13.1	10.0
30	11.6	9.6	---	---	6.7	5.4	---	---	---	---	10.8	9.0
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	11.9	8.9	13.3	7.2	17.6	4.0	19.8	3.2	13.9	5.6	16.6	4.2
YEAR	19.8	1.9										

04199500 VERMILION RIVER NEAR VERMILION, OH

LOCATION.--Lat 41°22'55", long 82°19'01", in T.6 N., R.19 W., Lorain County, Hydrologic Unit 04100012, on right bank 40 ft (12 m) downstream from bridge on North Ridge Road, 3.5 mi (5.6 km) southeast of Vermilion and 4.5 mi (7.2 km) upstream from mouth.

DRAINAGE AREA.--262 mi² (679 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1950 to current year.

REVISED RECORDS.--WSP 1912: Drainage area. WDR-OH-70-1: 1969.

GAGE.--Water-stage recorders. Datum of gage is 595.14 ft (181.399 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 3, 1953, nonrecording gage at site 40 ft (12 m) upstream at same datum.

REMARKS.--Records good except those for period of no gage height record and winter periods, which are fair.

AVERAGE DISCHARGE.--28 years, 262 ft³/s (7.419 m³/s), 13.58 in/yr (345 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,800 ft³/s (1,160 m³/s) July 6, 1969, gage height, 17.14 ft (5.224 m), from rating curve extended above 7,000 ft³/s (198 m³/s on basis of contracted-opening measurement of peak flow; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,200 ft³/s (90.6 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 8	2000	8150	231	7.84	2.390	Jan. 29	1700	8910	252	8.15	2.484
Dec. 15	0600	*36900	1045	*16.33	4.977	Mar. 15	0600	26800	759	13.96	4.255
Jan. 9	0900	12900	365	9.72	2.963	Mar. 21	0200	28900	818	14.46	4.410

Minimum discharge, 7.5 ft³/s (0.21 m³/s) Sept. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	28	1470	190	2600	370	652	105	333	83	9.3	5.8
2	18	28	1560	185	2100	370	515	98	184	91	8.4	5.4
3	15	28	676	180	1600	370	676	93	119	208	12	4.7
4	14	29	426	180	1300	365	1040	88	89	198	12	4.0
5	14	30	327	175	1100	365	1100	83	74	168	12	3.8
6	25	31	310	175	960	365	1050	147	63	111	11	3.6
7	32	62	300	250	840	365	1340	144	60	83	16	3.2
8	39	97	300	400	730	365	789	130	57	65	32	3.0
9	47	95	300	2100	650	365	468	141	54	53	40	2.6
10	116	109	305	1700	600	365	355	265	53	45	127	2.8
11	114	127	310	1300	550	365	306	243	50	40	104	2.4
12	83	136	450	1000	500	480	450	184	47	33	56	8.4
13	65	111	4080	900	480	1300	372	239	270	30	30	10
14	53	89	21400	800	460	10000	316	789	243	30	21	6.8
15	46	77	22900	720	450	21500	280	906	130	40	16	12
16	42	77	6050	680	435	22500	231	599	81	52	13	8.9
17	39	205	2490	650	425	17500	194	501	62	35	11	7.2
18	36	543	1850	630	420	12700	168	444	50	29	9.8	6.1
19	35	344	1450	610	410	10700	150	355	46	25	8.9	6.1
20	36	208	1100	600	405	15200	133	251	72	22	8.0	5.1
21	38	165	1030	600	400	14100	119	438	124	21	7.2	4.0
22	36	140	724	600	395	4970	111	333	69	19	7.2	3.8
23	35	125	470	600	390	2600	180	212	50	23	6.8	3.6
24	34	120	400	620	385	1460	500	327	41	27	5.8	3.6
25	33	115	350	660	380	879	1200	456	35	22	5.4	3.4
26	31	110	315	1100	380	1210	2150	255	89	26	5.1	3.2
27	30	107	285	2000	375	2450	740	177	444	24	4.7	3.2
28	29	105	260	3500	375	1640	290	133	360	16	4.0	3.2
29	28	105	240	7000	---	1000	130	104	187	12	4.7	3.2
30	27	165	220	5200	---	700	115	138	116	10	4.4	3.2
31	27	---	200	3700	---	613	---	585	---	9.3	4.7	---
TOTAL	1238	3711	72548	39005	20095	147532	16170	8963	3652	1650.3	617.4	146.3
MEAN	39.9	124	2340	1258	718	4759	539	289	122	53.2	19.9	4.88
MAX	116	543	22900	7000	2600	22500	2150	906	444	208	127	12
MIN	14	28	200	175	375	365	111	83	35	9.3	4.0	2.4
CFSM	.15	.47	8.93	4.80	2.74	18.2	2.06	1.10	.47	.20	.08	.02
IN.	.18	.53	10.30	5.54	2.85	20.95	2.30	1.27	.52	.23	.09	.02

CAL YR 1977 TOTAL 161646.2 MEAN 443 MAX 22900 MIN 7.6 CFSM 1.69 IN 22.95
WTR YR 1978 TOTAL 315328.0 MEAN 864 MAX 22900 MIN 2.4 CFSM 3.30 IN 44.77

04199500 VERMILION RIVER NEAR VERMILION, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1950 to February 1952, February 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: February 1969 to current year.
pH: December 1976 to current year.
WATER TEMPERATURES: March to August 1950, February 1969 to current year.
DISSOLVED OXYGEN: December 1976 to current year.

INSTRUMENTATION.--Water-quality monitor since February 1969.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Sediment data collected at this site 1970 to 1976.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,200 micromhos Nov. 21, 1974; minimum, 160 micromhos Jan. 19, 1974.
pH: Maximum, 9.1 units May 1, 11, 1977; minimum, 7.4 units July 1, 1977.
WATER TEMPERATURES: Maximum, 34.0°C Aug. 5, 1973, July 8, 1974; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum recorded, 14.9 mg/L Oct. 17, Nov. 26, 1977; minimum, 5.2 mg/L May 19, 20, 1977.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 816 micromhos Sept. 30; minimum recorded, 327 micromhos Dec. 19.
pH: Maximum recorded, 9.0 units July 13, 14; minimum recorded, 7.5 units Dec. 19.
WATER TEMPERATURES: Maximum recorded, 30.0°C Aug. 17; minimum recorded, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum recorded, 14.9 mg/L Oct. 17, Nov. 26; minimum recorded, 6.4 mg/L July 15.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	510	441			---	---	738	564	---	---		
2	486	390			---	---	612	603	---	---		
3	---	---			450	405	---	---	---	---		
4	---	---			459	441	---	---	---	---		
5	---	---			---	---	---	---	---	---		
6	---	---			---	---	---	---	---	---		
7	---	---			---	---	---	---	---	---		
8	---	---			---	---	---	---	---	---		
9	---	---			---	---	---	---	---	---		
10	---	---			---	---	---	---	639	630		
11	---	---			---	---	---	---	645	630		
12	---	---			---	---	---	---	666	642		
13	---	---			---	---	---	---	690	651		
14	---	---			---	---	---	---	738	672		
15	---	---			---	---	---	---	681	672		
16	---	---			---	---	---	---	684	678		
17	---	---			---	---	---	---	690	684		
18	---	---			---	---	---	---	---	---		
19	---	---			333	327	---	---	---	---		
20	---	---			340	333	---	---	657	570		
21	---	---			450	426	---	---	588	543		
22	---	---			474	447	---	---	570	564		
23	---	---			501	471	---	---	---	---		
24	---	---			504	498	---	---	---	---		
25	---	---			510	369	---	---	---	---		
26	---	---			---	---	---	---	---	---		
27	---	---			---	---	---	---	---	---		
28	---	---			---	---	---	---	---	---		
29	---	---			513	501	---	---	---	---		
30	---	---			537	513	---	---	---	---		
31	---	---			564	540	---	---	---	---		
MONTH	510	390			564	327	738	564	738	543		

04199500 VERMILION RIVER NEAR VERMILION, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	519	456	588	567	669	660	684	672
2	---	---	---	---	537	531	600	564	681	666	687	678
3	---	---	570	552	---	---	648	594	672	615	708	687
4	---	---	609	552	---	---	624	615	660	642	717	705
5	---	---	603	558	---	---	636	615	678	657	714	699
6	---	---	609	582	---	---	636	627	687	675	705	696
7	---	---	612	594	---	---	657	633	687	570	705	696
8	---	---	615	600	600	591	660	648	630	600	714	702
9	---	---	630	603	606	600	663	660	654	534	717	705
10	---	---	630	606	612	606	---	---	600	444	720	708
11	---	---	657	615	621	612	---	---	573	513	723	711
12	---	---	654	531	627	597	672	642	510	474	723	618
13	---	---	546	489	645	360	678	639	483	471	690	627
14	---	---	486	429	498	348	666	624	597	486	702	657
15	---	---	462	411	501	492	654	651	597	549	762	693
16	---	---	459	420	516	495	---	---	564	552	744	735
17	---	---	489	459	543	513	---	---	582	564	771	750
18	---	---	498	486	567	543	---	---	591	570	798	741
19	---	---	495	477	576	558	---	---	600	585	759	732
20	---	---	510	498	594	576	---	---	615	594	744	729
21	---	---	---	---	621	579	---	---	621	606	738	723
22	---	---	---	---	648	621	---	---	630	615	735	726
23	---	---	---	---	666	648	---	---	639	624	741	732
24	---	---	---	---	663	606	---	---	642	627	744	735
25	---	---	---	---	606	420	---	---	648	636	750	741
26	---	---	---	---	630	426	---	---	654	645	756	747
27	531	528	---	---	636	405	606	528	660	648	762	750
28	528	501	---	---	507	438	606	591	663	651	768	759
29	---	---	---	---	540	510	630	603	669	654	795	753
30	---	---	---	---	570	537	645	630	675	660	816	783
31	---	---	---	---	---	---	660	648	675	657	---	---
MONTH	531	501	657	411	666	348	678	528	687	444	816	618
YEAR	816	327										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04199500 VERMILION RIVER NEAR VERMILION, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.7	8.3	8.4	8.2	8.0	7.7	7.8	7.7				
2	8.7	8.3	8.4	8.2	7.9	7.8	7.8	7.8				
3	8.8	8.3	8.3	8.2	8.0	7.9	---	---				
4	8.8	8.4	8.2	8.1	8.1	8.0	---	---				
5	8.7	8.4	8.3	8.1	8.2	8.1	---	---				
6	8.7	8.4	8.3	8.1	8.2	8.2	---	---				
7	8.6	8.4	8.2	8.0	---	---	---	---				
8	8.5	8.3	8.2	8.1	---	---	---	---				
9	8.5	8.3	8.4	8.1	---	---	---	---				
10	8.4	8.3	8.3	8.1	---	---	---	---				
11	8.5	8.3	8.5	8.3	---	---	---	---				
12	8.5	8.4	8.5	8.3	---	---	---	---				
13	8.7	8.4	8.6	8.4	---	---	---	---				
14	8.8	8.4	8.6	8.4	---	---	---	---				
15	8.8	8.4	8.6	8.4	---	---	---	---				
16	8.9	8.4	8.6	8.3	---	---	---	---				
17	8.9	8.5	8.3	8.2	---	---	---	---				
18	8.9	8.5	8.2	8.2	---	---	---	---				
19	8.9	8.4	8.2	8.1	7.8	7.5	---	---				
20	---	---	8.2	8.1	7.8	7.8	---	---				
21	---	---	8.4	8.1	7.9	7.7	---	---				
22	---	---	8.5	8.2	7.9	7.9	---	---				
23	---	---	8.4	8.3	7.9	7.9	---	---				
24	8.5	8.2	8.6	8.2	8.0	7.9	---	---				
25	8.5	8.3	8.5	8.3	7.9	7.8	---	---				
26	8.5	8.2	8.6	8.4	---	---	---	---				
27	8.4	8.2	---	---	---	---	---	---				
28	8.4	8.2	---	---	---	---	---	---				
29	8.4	8.2	8.5	8.4	7.7	7.7	---	---				
30	8.4	8.3	8.4	8.1	7.7	7.6	---	---				
31	8.4	8.3	---	---	7.7	7.7	---	---				
MONTH	8.9	8.2	8.6	8.0	8.2	7.5	7.8	7.7				

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	8.1	8.0	8.4	8.2	8.5	8.1	8.5	8.2
2	---	---	---	---	8.2	8.1	8.3	8.2	8.5	8.1	8.5	8.2
3	---	---	8.8	8.6	---	---	8.3	8.1	8.4	7.9	8.5	8.2
4	---	---	8.8	8.5	---	---	8.4	8.2	8.5	8.1	8.5	8.2
5	---	---	8.5	8.3	---	---	8.5	8.4	8.5	8.1	8.5	8.2
6	---	---	8.7	8.3	---	---	8.6	8.3	8.4	8.1	8.5	8.1
7	---	---	8.7	8.4	---	---	8.7	8.4	8.3	8.0	8.5	8.1
8	---	---	8.6	8.3	8.6	8.4	8.7	8.4	8.3	8.1	8.5	8.1
9	---	---	8.7	8.2	8.7	8.3	8.4	8.4	8.5	8.0	8.4	8.1
10	---	---	8.7	8.4	8.7	8.3	---	---	8.2	7.9	8.4	8.1
11	---	---	8.6	8.4	8.7	8.3	---	---	8.3	8.1	8.5	8.1
12	---	---	8.5	8.1	8.6	8.3	8.9	8.4	8.4	8.1	8.2	7.6
13	---	---	8.4	8.1	8.4	8.0	9.0	8.4	8.5	8.0	8.3	8.0
14	---	---	8.1	8.0	8.1	7.9	9.0	8.4	8.6	8.0	8.4	8.1
15	---	---	8.1	8.0	8.2	8.1	8.5	8.4	8.7	8.0	8.4	8.0
16	---	---	8.2	8.0	8.2	8.1	---	---	8.7	8.1	8.6	8.2
17	---	---	8.4	8.1	8.3	8.1	---	---	8.7	8.1	8.6	8.2
18	---	---	8.7	8.1	8.4	8.1	---	---	8.8	8.1	8.6	8.1
19	---	---	8.8	8.1	8.5	8.1	---	---	8.7	8.1	8.6	8.1
20	---	---	8.8	8.1	8.5	8.2	---	---	8.7	8.1	8.6	8.1
21	---	---	---	---	8.5	8.3	---	---	8.7	8.1	8.5	8.1
22	---	---	---	---	8.7	8.4	---	---	8.6	8.1	8.6	8.2
23	---	---	---	---	8.7	8.4	---	---	8.6	8.1	8.5	8.2
24	---	---	---	---	8.8	8.4	---	---	8.6	8.1	8.5	8.2
25	---	---	---	---	8.8	8.2	---	---	8.5	8.1	8.5	8.2
26	---	---	---	---	8.1	7.9	---	---	8.5	8.1	8.5	8.3
27	8.6	8.5	---	---	8.1	7.9	8.5	8.1	8.5	8.1	8.5	8.3
28	8.8	8.5	---	---	8.1	7.9	8.5	8.1	8.5	8.1	8.5	8.2
29	---	---	---	---	8.2	8.1	8.5	8.1	8.5	8.1	8.4	8.3
30	---	---	---	---	8.3	8.1	8.5	8.1	8.4	8.1	8.4	8.2
31	---	---	---	---	---	---	8.5	8.0	8.5	8.1	---	---
MONTH	8.8	8.5	8.8	8.0	8.8	7.9	9.0	8.0	8.8	7.9	8.6	7.6
YEAR	9.0	7.5										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04199500 VERMILION RIVER NEAR VERMILION, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	19.5	16.5	11.5	9.0	4.0	1.0	.0	.0	---	---		
2	16.5	13.5	14.0	9.0	4.5	4.0	.0	.0	---	---		
3	15.0	12.0	15.5	11.5	3.5	3.0	---	---	---	---		
4	17.0	12.0	14.0	13.0	2.5	1.0	---	---	---	---		
5	14.0	12.0	16.0	13.0	1.0	.5	---	---	---	---		
6	15.5	12.0	17.0	14.0	---	---	---	---	---	---		
7	14.0	12.0	16.0	15.0	---	---	---	---	---	---		
8	14.0	12.0	15.5	14.5	---	---	---	---	---	---		
9	13.5	10.5	16.0	14.0	---	---	---	---	---	---		
10	12.5	9.5	15.5	9.0	---	---	---	---	.0	.0		
11	11.5	9.5	8.5	5.5	---	---	---	---	.0	.0		
12	9.5	8.0	5.5	4.5	---	---	---	---	.0	.0		
13	10.5	8.5	4.5	3.0	---	---	---	---	.0	.0		
14	11.5	7.5	3.0	2.5	---	---	---	---	.0	.0		
15	11.0	7.5	5.0	2.5	---	---	---	---	.0	.0		
16	9.5	7.0	7.5	5.5	---	---	---	---	.0	.0		
17	9.5	6.0	7.5	6.0	---	---	---	---	.0	.0		
18	11.5	7.0	6.0	5.5	---	---	---	---	---	---		
19	11.0	8.5	5.5	4.5	5.0	4.5	---	---	---	---		
20	---	---	7.5	5.0	4.5	3.5	---	---	.5	.0		
21	---	---	8.0	5.5	2.5	1.5	---	---	.5	.0		
22	---	---	5.5	4.0	1.5	.0	---	---	.5	.0		
23	---	---	5.5	4.5	1.0	.0	---	---	---	---		
24	13.0	8.5	5.5	5.0	2.5	.0	---	---	---	---		
25	13.0	10.0	5.0	3.0	3.0	.5	.0	.0	---	---		
26	15.0	12.0	3.0	.0	1.0	.5	.0	.0	---	---		
27	14.0	11.5	---	---	---	---	---	---	---	---		
28	14.5	10.5	---	---	---	---	---	---	---	---		
29	13.0	9.0	.0	.0	.0	.0	---	---	---	---		
30	12.5	8.0	1.0	.0	.0	.0	---	---	---	---		
31	11.5	7.5	---	---	.0	.0	---	---	---	---		
MONTH	19.5	6.0	17.0	.0	5.0	.0	.0	.0	.5	.0		

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	25.0	23.5	25.0	21.0	28.5	20.5	26.5	18.5
2	---	---	---	---	23.5	23.0	21.0	19.0	27.5	21.5	26.5	18.0
3	---	---	16.5	14.0	---	---	19.5	18.0	26.0	23.0	27.5	20.0
4	---	---	13.5	11.0	---	---	20.5	18.5	27.0	20.5	26.5	20.0
5	---	---	11.0	10.5	---	---	23.5	18.5	24.0	18.0	26.5	18.0
6	---	---	12.0	10.0	---	---	26.0	20.0	22.5	20.5	28.0	21.0
7	---	---	15.0	9.5	---	---	28.0	22.5	22.5	20.5	29.0	22.0
8	---	---	14.5	13.0	22.5	19.5	29.5	24.5	26.0	20.0	29.0	23.0
9	---	---	16.0	13.0	25.0	17.5	25.0	23.0	27.0	22.0	28.0	23.5
10	---	---	15.5	13.0	26.0	19.0	---	---	25.5	21.0	29.0	21.5
11	---	---	17.5	12.5	27.5	20.0	---	---	23.5	20.5	27.5	23.0
12	---	---	16.5	15.5	25.5	21.5	27.0	18.0	25.5	20.5	24.0	21.0
13	---	---	16.0	14.5	21.0	17.0	26.0	20.0	28.0	21.5	21.5	19.5
14	---	---	14.5	13.5	19.5	15.5	28.0	22.5	28.0	22.0	23.5	18.5
15	---	---	14.0	13.0	20.0	16.0	24.0	22.0	29.0	23.0	25.0	19.5
16	---	---	15.0	12.5	21.5	17.5	---	---	28.0	24.0	24.0	20.0
17	---	---	16.0	13.0	26.5	21.0	---	---	30.0	22.0	25.0	19.5
18	---	---	18.5	14.5	28.0	23.0	---	---	29.5	22.5	27.5	22.5
19	---	---	21.5	15.5	29.5	23.0	---	---	29.5	24.0	27.0	23.0
20	---	---	20.5	18.5	28.5	22.5	---	---	27.5	20.5	29.0	22.5
21	---	---	---	---	26.5	23.0	---	---	28.0	19.0	27.0	22.0
22	---	---	---	---	26.0	20.5	---	---	28.5	20.0	24.0	19.0
23	---	---	---	---	27.0	20.0	---	---	28.0	20.5	22.0	16.0
24	---	---	---	---	28.0	21.0	---	---	27.5	22.0	23.0	15.0
25	---	---	---	---	26.5	21.5	---	---	27.5	23.5	22.0	16.5
26	---	---	---	---	22.5	21.5	---	---	27.5	21.0	21.5	15.0
27	15.0	13.0	---	---	24.0	21.0	28.0	25.0	27.5	21.5	21.5	14.5
28	16.5	10.5	---	---	26.5	21.5	28.5	22.0	27.0	22.5	20.0	15.0
29	---	---	---	---	28.0	23.0	25.5	21.0	26.0	22.0	18.5	11.5
30	---	---	---	---	27.5	24.0	26.5	20.5	23.0	20.0	19.5	13.0
31	---	---	---	---	---	---	27.5	20.5	25.5	18.5	---	---
MONTH	16.5	10.5	21.5	9.5	29.5	15.5	29.5	18.0	30.0	18.0	29.0	11.5
YEAR	30.0	.0										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04199500 VERMILION RIVER NEAR VERMILION, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	11.7	8.0	10.8	9.4	12.8	11.8	14.5	14.0	---	---		
2	12.0	8.1	10.4	9.1	12.5	11.8	14.6	14.1	---	---		
3	12.4	9.3	10.3	8.3	12.8	12.2	---	---	---	---		
4	12.6	9.1	8.8	8.1	13.4	12.6	---	---	---	---		
5	12.0	9.5	9.6	7.8	13.5	13.0	---	---	---	---		
6	11.8	9.4	9.7	7.7	13.5	13.0	---	---	---	---		
7	13.8	9.5	8.8	7.7	---	---	---	---	---	---		
8	10.7	9.0	8.8	7.6	---	---	---	---	---	---		
9	10.6	9.0	9.8	7.6	---	---	---	---	---	---		
10	11.9	9.8	9.9	7.5	---	---	---	---	12.2	11.7		
11	10.9	9.9	11.5	9.4	---	---	---	---	12.1	10.5		
12	12.3	10.4	12.1	10.4	---	---	---	---	11.8	11.0		
13	13.1	10.4	12.7	10.7	---	---	---	---	11.5	10.7		
14	13.4	10.7	14.9	11.2	---	---	---	---	11.0	10.5		
15	14.0	9.8	13.5	11.2	---	---	---	---	11.6	11.2		
16	14.2	9.6	13.3	10.6	---	---	---	---	11.2	10.3		
17	14.9	10.3	11.9	10.8	---	---	---	---	11.0	10.2		
18	14.3	9.9	12.0	11.3	---	---	---	---	---	---		
19	14.6	9.5	12.9	11.8	12.3	12.0	---	---	---	---		
20	---	---	12.8	11.3	12.4	12.0	---	---	---	---		
21	---	---	12.4	11.2	13.0	12.1	---	---	---	---		
22	---	---	13.6	12.2	13.3	12.2	---	---	---	---		
23	---	---	13.2	12.1	13.4	12.1	---	---	---	---		
24	13.1	11.8	13.9	11.9	13.2	11.8	---	---	---	---		
25	11.9	9.6	14.0	12.1	12.5	11.3	12.3	11.4	---	---		
26	11.0	8.8	14.9	12.7	---	---	10.8	10.6	---	---		
27	10.5	8.5	---	---	---	---	---	---	---	---		
28	11.2	9.3	---	---	---	---	---	---	---	---		
29	11.0	9.3	14.8	13.6	12.8	11.4	---	---	---	---		
30	11.0	9.3	14.2	12.7	14.1	12.1	---	---	---	---		
31	11.7	9.4	---	---	14.4	13.6	---	---	---	---		
MONTH	14.9	8.0	14.9	7.5	14.4	11.3	14.6	10.6	12.2	10.2		

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	7.6	7.2	9.1	7.6	10.9	7.0	10.8	7.8
2	---	---	---	---	7.3	6.5	9.3	8.2	10.4	6.5	10.8	7.8
3	---	---	11.5	6.8	---	---	9.2	8.4	9.6	7.4	10.5	7.6
4	---	---	11.5	9.3	---	---	9.1	8.5	10.8	7.5	9.4	7.2
5	---	---	10.7	9.7	---	---	9.6	7.8	10.9	7.8	9.5	7.2
6	---	---	11.2	9.7	---	---	9.8	7.6	9.7	7.6	9.4	7.1
7	---	---	11.3	8.8	---	---	10.0	7.3	9.5	7.8	10.0	6.8
8	---	---	10.4	8.7	10.0	8.1	10.1	6.8	9.5	7.9	10.4	7.3
9	---	---	9.5	8.2	10.5	7.7	7.7	7.0	9.5	7.9	10.3	7.0
10	---	---	9.4	8.1	10.4	7.4	---	---	8.8	7.7	10.1	7.3
11	---	---	9.0	7.2	9.9	7.1	---	---	9.5	8.1	9.8	7.0
12	---	---	9.8	7.1	9.4	7.0	11.4	7.0	9.7	8.3	8.5	7.2
13	---	---	9.5	8.4	8.8	7.6	10.9	6.6	10.2	7.8	9.1	8.1
14	---	---	9.4	8.8	9.9	8.4	11.0	6.5	10.2	7.3	9.8	7.9
15	---	---	9.6	9.3	10.3	8.6	7.2	6.4	10.4	6.9	9.6	8.0
16	---	---	9.9	9.2	9.5	8.2	---	---	9.6	6.8	10.6	8.0
17	---	---	10.4	8.9	8.9	7.5	---	---	10.7	6.7	11.0	7.7
18	---	---	10.8	8.5	9.1	7.3	---	---	10.9	6.7	10.9	7.6
19	---	---	11.5	8.0	9.5	7.3	---	---	10.6	6.7	11.4	7.6
20	---	---	11.7	8.0	9.9	7.8	---	---	11.8	6.8	10.9	7.7
21	---	---	---	---	9.8	8.2	---	---	11.6	7.3	11.4	7.7
22	---	---	---	---	11.1	8.4	---	---	11.2	7.2	13.2	9.9
23	---	---	---	---	11.3	7.8	---	---	11.1	7.1	11.5	8.7
24	---	---	---	---	11.8	7.6	---	---	10.5	6.9	10.9	8.2
25	---	---	---	---	11.9	7.4	---	---	9.8	6.6	10.1	8.0
26	---	---	---	---	9.1	7.1	---	---	10.4	7.1	10.5	8.4
27	11.4	9.6	---	---	9.2	8.2	11.5	6.6	9.7	6.8	10.1	8.2
28	11.6	9.0	---	---	9.1	7.8	10.7	6.7	9.2	6.7	10.4	8.3
29	---	---	---	---	8.8	7.7	10.0	7.2	9.8	6.8	11.2	9.0
30	---	---	---	---	9.4	7.0	10.7	7.3	9.7	7.4	10.4	8.2
31	---	---	---	---	---	---	10.7	7.2	10.6	7.9	---	---
MONTH	11.6	9.0	11.7	6.8	11.9	6.5	11.5	6.4	11.8	6.5	13.2	6.8
YEAR	14.9	6.4										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04200500 BLACK RIVER AT ELYRIA, OH

LOCATION.--Lat 41°22'49", long 82°06'17", in T.6 N., R.17 W., Lorain County, Hydrologic Unit 04110001, on left bank in Cascade Park at Elyria, 0.8 mi (1.3 km) downstream from confluence of East and West Branches.

DRAINAGE AREA.--396 mi² (1,026 km²).

PERIOD OF RECORD.--October 1944 to current year. Records for May 1903 to July 1906 (published as "near Elyria") published in WSP 97, 129, and 205, are unreliable and should not be used.

REVISED RECORDS.--WSP 1912: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 620.83 ft (189.229 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter periods, which are fair. Some regulation at low flow for industrial use. Water-quality data collected at this site 1969 to 1974. Sediment data collected 1970 to 1974.

AVERAGE DISCHARGE.--34 years, 322 ft³/s (9.119 m³/s), 11.04 in/yr (280 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,700 ft³/s (1,460 m³/s) July 6, 1969, gage height, 26.4 ft (8.05 m), (from flood mark), from rating curve extended above 13,000 ft³/s (368 m³/s) on basis of slope-area measurement of peak flow; no flow for part of Oct. 10, 1956 (result of temporary storage at dam upstream).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,200 ft³/s (90.6 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 15	2300	*13400	379	*17.03	5.191	Mar. 27	1500	3300	93.5	8.38	2.554
Mar. 16	1200	10400	295	15.21	4.636	Apr. 21	0400	3760	106	8.98	2.737
Mar. 22	1000	5980	169	11.48	3.499						

Minimum daily discharge, 5.3 ft³/s (0.15 m³/s) Sept.4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	19	2020	105	800	64	648	105	604	52	11	8.4
2	28	21	2210	96	500	63	540	89	275	77	11	6.6
3	25	22	972	88	400	63	767	77	128	250	40	6.2
4	23	24	467	83	300	62	1410	74	87	166	30	5.3
5	23	28	350	82	250	62	1540	139	71	172	20	6.8
6	26	27	340	82	200	62	1260	265	60	99	15	7.6
7	21	65	340	86	170	62	1540	229	64	65	20	8.3
8	36	73	345	300	150	62	989	164	55	47	44	8.8
9	30	74	345	600	140	62	492	315	51	34	53	7.8
10	26	99	345	490	130	62	325	966	47	31	79	6.9
11	28	94	350	430	125	66	354	426	42	26	66	8.3
12	49	128	360	370	120	100	448	233	92	22	35	36
13	47	124	387	320	115	451	398	266	84	21	21	14
14	40	106	4650	280	105	2960	249	1070	93	18	22	13
15	33	100	10400	250	100	7040	178	1140	58	17	19	22
16	42	129	9300	220	96	9020	142	681	45	21	16	15
17	32	422	3390	200	90	5020	123	642	35	21	13	14
18	27	790	1910	190	88	2860	116	634	28	21	11	15
19	24	560	1450	180	84	2050	290	843	34	18	9.8	12
20	23	295	840	170	80	2630	2440	403	31	15	8.6	9.0
21	27	198	620	170	78	4730	3460	597	38	15	11	9.0
22	24	150	425	170	76	5720	1930	515	40	12	10	8.4
23	21	135	350	175	74	3080	901	282	30	60	9.4	7.5
24	21	125	300	180	72	1480	517	529	24	27	8.3	6.3
25	21	120	255	213	70	833	416	620	21	18	8.1	7.7
26	21	120	215	454	68	1500	328	355	137	17	7.6	7.9
27	20	115	160	729	66	3110	239	200	129	17	6.7	7.5
28	19	115	160	1120	65	2250	183	136	303	21	10	7.8
29	19	115	140	1340	---	1090	145	101	148	16	9.9	7.6
30	17	287	125	1310	---	696	123	94	81	12	10	19
31	17	---	115	1140	---	537	---	110	---	11	11	---
TOTAL	847	4680	43656	11625	4612	57847	22491	12700	2935	1419	646.4	319.7
MEAN	27.3	156	1408	375	165	1866	750	410	97.8	45.8	20.9	10.7
MAX	49	790	10400	1340	800	9020	3460	1140	604	250	79	36
MIN	17	19	115	82	65	62	116	74	21	11	6.7	5.3
CFSM	.07	.39	3.56	.95	.42	4.71	1.89	1.04	.25	.12	.05	.03
IN.	.08	.44	4.10	1.09	.43	5.43	2.11	1.19	.28	.13	.06	.03

CAL YR 1977 TOTAL 146228.0 MEAN 401 MAX 10400 MIN 12 CFSM 1.01 IN 13.74
WTR YR 1978 TOTAL 163778.1 MEAN 449 MAX 10400 MIN 5.3 CFSM 1.13 IN 15.39

04200550 BLACK RIVER BELOW ELYRIA, OH

LOCATION.--Lat 41°24'42", long 82°05'45", in T.6 N., R.17 W., Lorain County, Hydrologic Unit 04110001, at Ford Road bridge on north edge of Elyria, 0.7 mi (1.1 km) downstream from Elyria sewage disposal plant, and 5.2 mi (8.4 km) downstream from discharge station at Elyria.

DRAINAGE AREA.--412 mi^2 (1,067 km^2).

PERIOD OF RECORD.--January 1966 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1966 to current year.
pH: October 1976 to current year.
WATER TEMPERATURES: January 1966 to current year.
DISSOLVED OXYGEN: January 1966 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Dissolved oxygen concentrations listed as 15.0 mg/L represent concentrations of 15.0 mg/L or higher due to instrument limitations prior to March 29, 1978; 20.0 mg/L limitation thereafter. See records of discharge for station at Elyria (station 04200500).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 2,900 micromhos Feb. 11, 1977; minimum, 117 micromhos Jan. 27, 1976.
pH: Maximum, 9.5 units Apr. 30, 1978; minimum, 6.4 units Aug. 9, 1978.
WATER TEMPERATURES: Maximum, 33.0°C June 7, 1973; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher on many days during 1966, 1972, 1973, 1975, 1977; minimum, 0.0 mg/L June 3, 5, 6, July 3, 4, 1966, July 31, Aug. 1, 2, 22, 23, 1974, Aug. 27, 1977.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 2,440 micromhos Sept. 30; minimum, 240 micromhos Mar. 16.
pH: Maximum 9.5 units Apr. 30; minimum, 6.4 units Aug. 9.
WATER TEMPERATURES: Maximum, 29.5°C July 22; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 14.4 mg/L Dec. 16, Jan. 30; minimum, 0.0 mg/L Aug. 3, Sept. 14.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM-FLOW (CFS)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
DEC									
01...	1230	2140	2140	520	8.0	4.0	4.0	11.6	88
02...	0945	2380	2380	480	8.0	2.0	4.0	12.0	92
14...	1415	5900	5900	340	7.9	2.5	1.0	13.0	91
15...	0900	9000	9000	240	7.8	1.0	1.0	13.8	97
MAR									
17...	1245	4770	4770	240	7.6	-1.0	2.0	14.2	103
24...	1015	1500	1500	330	7.9	-5.0	3.5	13.7	103
28...	1100	2350	2350	380	7.9	10.0	5.0	12.2	95
30...	1130	726	726	495	7.9	3.0	5.5	13.0	103
APR									
21...	1345	3550	3550	360	7.8	2.0	8.0	11.8	99
MAY									
15...	1545	983	983	430	8.0	18.0	14.5	9.4	91

DATE	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)
DEC									
01...	71	45	6.5	318	370	688	3.6	.26	.58
02...	59	37	6.3	308	286	594	3.4	.26	.32
14...	83	33	4.4	203	615	818	2.5	.24	.71
15...	44	16	3.5	140	308	448	2.3	.19	.35
MAR									
17...	35	16	4.4	171	119	290	1.9	.44	.20
24...	25	18	5.7	219	156	375	1.6	.36	.18
28...	35	25	6.4	243	188	431	2.1	.28	.22
30...	25	31	7.3	303	83	386	2.0	.43	.23
APR									
21...	55	18	5.7	214	350	564	1.6	.29	.39
MAY									
15...	50	26	4.8	298	174	473	1.3	.55	.32

04200550 BLACK RIVER BELOW ELYRIA, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	ARSENIC TOTAL (UG/L AS AS)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)
DEC								
01...	.13	.40	1	5	30	66	31	<.5
02...	.13	.40	1	1	30	31	17	<.5
14...	.04	.12	2	1	40	72	62	<.5
15...	.09	.28	1	1	10	23	25	<.5
MAR								
17...	.06	.18	1	5	<10	18	38	<.5
24...	.03	.09	2	0	<10	11	9	<.5
28...	.07	.21	1	0	10	13	8	<.5
30...	.09	.28	1	1	20	19	6	<.5
APR								
21...	.07	.21	3	4	20	20	19	<.5
MAY								
15...	.21	.64	2	4	10	16	84	<.5

04200550 BLACK RIVER BELOW ELYRIA, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	1420	840	---	---	744	486	765	669	540	519	1160	1030
2	1130	837	1780	1660	510	468	849	753	579	534	1160	1060
3	1190	912	1910	1500	597	477	903	786	609	567	1190	1030
4	1270	951	1830	1500	585	546	1080	867	615	600	1230	1070
5	1270	960	1680	1410	744	579	1070	885	639	600	1060	1010
6	1190	984	1450	1290	747	699	1130	993	711	645	1080	963
7	1360	1060	1320	873	696	648	1210	1020	771	690	1130	1030
8	1240	789	1220	972	684	642	---	---	783	726	1140	1010
9	921	852	1160	1030	681	633	---	---	840	771	1080	1000
10	1020	843	1210	990	690	666	---	---	879	798	---	---
11	1260	918	---	---	705	675	---	---	864	777	---	---
12	---	---	---	---	735	690	---	---	825	762	---	---
13	---	---	---	---	912	741	---	---	864	816	---	---
14	---	---	---	---	---	---	636	621	930	834	---	---
15	---	---	---	---	---	---	651	612	978	903	258	246
16	---	---	---	---	291	255	711	627	957	882	246	240
17	---	---	---	---	387	294	768	690	978	882	276	246
18	---	---	---	---	438	387	819	744	1000	903	312	276
19	---	---	---	---	453	414	876	777	909	876	348	315
20	---	---	---	---	495	453	831	768	960	870	339	312
21	---	---	---	---	510	480	804	771	1010	936	312	270
22	---	---	---	---	567	510	798	765	1020	924	270	261
23	---	---	---	---	579	552	888	759	1040	954	324	267
24	---	---	---	---	657	570	882	822	1080	963	366	324
25	---	---	---	---	621	468	1110	849	1080	975	444	369
26	---	---	843	828	546	468	1120	864	981	933	468	435
27	---	---	903	819	564	525	852	666	1010	897	438	372
28	---	---	1050	837	663	552	654	576	1090	1000	390	369
29	---	---	1090	984	687	603	573	507	---	---	450	393
30	---	---	1120	774	693	615	519	495	---	---	501	450
31	---	---	---	---	738	636	531	513	---	---	540	495
MONTH	1420	789	1910	774	912	255	1210	495	1090	519	1230	240

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	531	504	840	660	795	483	999	828	1900	1350	1470	1210
2	549	504	963	759	588	465	927	633	1960	1360	1370	1200
3	570	516	975	792	702	570	708	573	1610	921	1250	1150
4	513	450	1080	834	654	597	711	624	1280	1090	1360	1150
5	495	447	825	684	828	624	846	702	1170	987	1450	1220
6	492	459	774	705	996	750	1010	798	1080	957	1660	1330
7	486	456	711	678	1210	744	999	867	1440	975	1550	1340
8	498	468	816	672	1040	756	909	840	1320	960	1770	1270
9	528	495	756	657	1110	837	864	819	1250	780	1930	1350
10	624	525	639	465	1090	858	897	825	960	705	1460	1280
11	714	594	534	456	999	804	1050	861	1010	798	1760	1250
12	657	612	633	516	963	570	1090	963	954	846	1750	816
13	672	633	648	576	837	684	1170	990	1110	909	1620	1100
14	729	657	948	492	942	783	1220	1050	1220	921	1930	1360
15	747	669	483	441	1080	840	1120	975	1430	1110	1410	1040
16	717	675	483	456	1190	918	957	831	1620	1240	1640	1250
17	777	651	528	480	1260	942	1020	882	1730	1290	1510	837
18	933	732	552	516	1050	897	1070	900	1890	1390	1340	921
19	885	675	531	462	1120	855	1100	951	1660	1340	1610	1020
20	663	384	540	474	1410	984	1120	966	1430	1130	2040	1280
21	384	369	534	495	1370	1070	1090	1000	1370	1030	1790	1320
22	411	372	531	504	1320	1010	1250	942	1880	1390	1900	1390
23	465	414	600	522	1500	1070	1090	510	1910	1330	2000	1490
24	543	465	711	516	1550	1180	912	684	1860	1400	1760	1370
25	585	537	516	480	1240	1040	1320	900	1680	1360	1490	1310
26	642	573	603	483	753	558	1440	1090	1630	1400	1940	1420
27	705	618	627	597	897	717	1680	1220	1470	1290	1980	1590
28	750	660	633	600	795	717	1570	1180	1750	1270	2020	1590
29	780	687	663	624	900	783	1400	1110	1690	1080	2130	1640
30	726	669	846	627	942	807	1120	978	1820	1210	2440	873
31	---	---	804	651	---	---	1470	1060	1380	1010	---	---
MONTH	933	369	1080	441	1550	465	1680	510	1960	705	2440	816
YEAR	2440	240										

STREAMS TRIBUTARY TO LAKE ERIE

04200550 BLACK RIVER BELOW ELYRIA, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.8	7.4	7.7	7.4	8.1	7.7	7.9	7.8	7.5	7.5	8.0	7.9
2	7.9	7.6	7.7	7.5	7.8	7.8	7.9	7.9	7.6	7.5	8.0	7.9
3	7.9	7.8	7.6	7.5	7.9	7.8	8.5	7.9	7.7	7.6	8.1	8.0
4	7.9	7.8	7.5	7.4	7.9	7.9	8.1	7.9	7.7	7.6	8.0	7.9
5	7.9	7.8	7.5	7.4	8.0	8.0	8.1	7.9	7.7	7.6	8.0	7.9
6	7.9	7.8	7.5	7.3	8.3	8.0	8.0	7.9	7.7	7.7	8.1	7.9
7	7.9	7.8	7.5	7.2	8.2	8.1	8.0	7.9	7.8	7.7	8.1	7.9
8	7.9	7.4	7.5	7.4	8.1	8.1	---	---	7.8	7.7	8.5	8.0
9	7.8	7.4	7.6	7.4	8.1	8.1	---	---	7.8	7.7	8.1	8.0
10	7.9	7.7	7.8	7.4	8.2	8.1	---	---	7.7	7.6	---	---
11	7.9	7.7	7.8	7.6	8.1	8.1	---	---	7.7	7.7	---	---
12	8.1	7.9	7.9	7.5	8.1	8.1	---	---	7.7	7.7	---	---
13	8.1	7.9	8.0	7.9	8.2	7.9	---	---	7.8	7.7	---	---
14	8.1	7.9	8.1	7.9	8.0	7.5	8.2	8.1	7.8	7.8	---	---
15	8.1	7.9	8.1	7.9	7.5	7.4	8.3	8.2	7.8	7.8	7.3	7.2
16	8.1	7.8	8.3	7.1	7.6	7.5	8.4	8.3	7.8	7.8	7.4	7.3
17	8.1	7.9	7.9	7.5	7.8	7.5	8.3	8.3	7.9	7.8	7.5	7.4
18	---	---	8.0	7.9	7.8	7.7	8.3	8.3	7.9	7.7	7.6	7.5
19	---	---	8.0	8.0	7.9	7.6	8.3	8.2	7.9	7.8	7.7	7.6
20	---	---	8.0	7.9	8.0	7.9	8.3	8.2	8.0	7.8	7.6	7.6
21	7.9	7.7	7.9	7.7	8.0	7.8	8.4	8.2	7.9	7.8	7.6	7.6
22	7.9	7.5	7.9	7.9	8.1	8.0	8.2	8.2	7.9	7.8	7.7	7.6
23	8.1	7.7	8.0	7.6	8.1	8.1	8.2	8.2	8.0	7.8	7.8	7.6
24	8.2	7.6	7.9	7.8	8.2	7.9	8.2	8.1	7.8	7.8	7.9	7.7
25	8.3	7.6	7.9	7.8	8.1	8.0	8.1	8.0	7.9	7.8	7.9	7.9
26	8.1	7.8	8.1	7.9	8.2	8.0	8.1	7.9	7.9	7.8	8.0	7.9
27	8.1	7.8	8.3	7.8	8.1	8.1	8.0	7.9	7.9	7.8	7.8	7.8
28	8.0	7.7	8.3	8.2	8.1	8.0	7.8	7.7	8.0	7.9	7.9	7.8
29	8.0	7.6	8.3	8.1	8.1	7.9	7.7	7.6	---	---	7.9	7.8
30	8.0	7.7	8.4	8.0	7.9	7.9	7.6	7.5	---	---	8.0	7.9
31	7.9	7.6	---	---	7.9	7.6	7.6	7.5	---	---	8.0	7.9
MONTH	8.3	7.4	8.4	7.1	8.3	7.4	8.5	7.5	8.0	7.5	8.5	7.2

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.1	7.9	9.3	9.0	8.4	8.1	7.7	7.6	7.9	7.5	7.5	7.2
2	8.2	8.1	9.1	8.8	8.1	8.0	7.6	7.3	7.6	7.3	7.5	7.2
3	8.2	8.0	9.1	8.7	8.2	8.1	7.6	7.3	7.5	7.1	7.5	7.2
4	8.0	7.9	9.0	8.6	8.2	8.1	7.7	7.4	7.7	7.4	7.6	7.3
5	8.0	7.9	8.6	8.2	8.3	7.7	7.9	7.6	7.6	7.5	7.5	7.3
6	8.0	7.7	8.5	8.1	8.1	7.7	7.8	7.4	7.4	7.1	7.6	7.4
7	7.9	7.8	8.6	8.1	8.1	7.7	7.8	7.5	7.2	7.0	7.6	7.3
8	8.0	8.0	8.4	8.1	8.1	7.6	7.9	7.5	7.8	7.2	7.6	7.4
9	8.0	8.0	8.6	8.0	8.2	7.9	7.9	7.5	7.9	6.4	7.6	7.2
10	8.0	7.4	8.7	8.1	8.2	7.7	7.9	7.4	8.0	7.1	7.5	7.1
11	8.3	7.2	8.5	8.0	8.8	7.9	8.0	7.6	7.9	7.5	7.5	7.1
12	8.3	8.1	8.3	7.9	8.3	8.0	8.1	7.8	8.1	7.5	7.4	7.2
13	8.3	8.2	8.2	7.9	8.1	7.9	8.0	7.5	8.1	7.4	7.5	7.3
14	8.4	8.2	8.2	8.0	8.4	8.0	8.1	7.3	8.3	7.4	7.5	7.2
15	8.6	8.1	8.1	8.0	8.5	8.0	8.2	7.5	8.3	7.5	7.7	7.2
16	8.8	8.2	8.2	8.0	8.6	8.0	8.3	7.4	8.2	7.6	7.5	7.2
17	8.9	8.2	8.2	8.1	8.9	8.1	8.5	7.7	8.2	7.7	7.3	7.1
18	8.7	8.2	8.3	8.0	8.9	8.2	8.4	7.7	7.8	7.4	7.5	7.0
19	8.5	7.9	8.3	8.1	8.7	8.2	8.4	7.6	7.7	7.3	7.5	7.1
20	8.0	7.3	8.3	8.1	8.7	8.2	8.1	7.5	7.8	7.5	7.6	7.0
21	7.8	7.6	8.4	8.0	8.5	8.1	7.8	7.4	7.9	7.5	7.6	7.1
22	7.9	7.6	8.3	8.2	8.5	8.2	7.7	7.2	7.8	7.5	7.8	7.4
23	8.0	7.8	8.2	8.1	8.4	8.1	7.7	7.2	7.7	7.5	7.6	7.5
24	8.0	7.1	8.2	8.0	8.4	8.1	7.6	7.4	7.6	7.3	7.6	7.2
25	7.5	6.8	8.2	8.0	8.4	8.1	7.6	7.2	7.6	7.3	7.6	7.3
26	7.8	6.9	8.3	8.0	8.1	7.6	7.6	7.3	7.8	7.5	7.8	7.5
27	7.4	7.0	8.4	8.1	8.2	7.6	7.6	7.3	7.7	7.3	7.8	7.4
28	7.8	7.2	8.5	8.1	8.4	8.0	7.8	7.5	7.5	7.2	7.8	7.7
29	7.9	7.4	8.6	8.2	8.1	7.8	7.7	7.4	7.6	7.3	8.0	7.8
30	9.5	7.2	8.5	8.1	7.9	7.7	8.1	7.5	7.5	7.2	7.9	7.1
31	---	---	8.5	8.0	---	---	7.9	7.6	7.5	7.1	---	---
MONTH	9.5	6.8	9.3	7.9	8.9	7.6	8.5	7.2	8.3	6.4	8.0	7.0
YEAR	9.5	6.4										

04200550 BLACK RIVER BELOW ELYRIA, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	19.0	17.5	15.5	12.5	5.5	4.0	1.5	.5	.0	.0	1.5	.5
2	18.0	15.5	17.0	12.5	5.5	5.0	1.0	.0	.0	.0	1.5	.5
3	16.0	13.5	18.5	14.5	5.0	4.5	1.0	.0	.0	.0	1.5	.5
4	17.5	13.5	17.5	16.5	4.5	3.5	2.0	.0	.0	.0	1.5	.5
5	16.0	13.0	17.5	15.5	3.5	2.0	2.0	1.0	.0	.0	1.5	.5
6	16.5	13.5	18.5	15.5	2.0	1.0	2.0	1.0	.0	.0	2.0	.5
7	17.0	13.0	17.5	15.5	1.0	.5	2.5	1.0	.0	.0	2.0	.0
8	16.0	14.5	16.5	15.5	1.0	.5	---	---	.0	.0	2.0	.5
9	15.5	13.5	17.5	15.0	1.0	.5	---	---	.0	.0	1.5	.5
10	16.5	12.0	16.5	11.5	.5	.5	---	---	1.5	.0	---	---
11	14.5	13.0	11.5	9.0	.5	.0	---	---	1.5	.5	---	---
12	13.0	10.5	9.0	7.0	1.5	.5	---	---	1.5	.5	---	---
13	13.0	11.5	7.0	5.5	2.0	1.0	---	---	1.5	.5	---	---
14	13.0	10.5	6.5	4.5	1.5	.5	.0	.0	1.5	.5	---	---
15	13.5	10.0	7.0	5.0	1.0	.5	.0	.0	1.5	.5	.5	.0
16	13.5	10.5	8.5	6.5	1.5	.5	.0	.0	1.5	.5	.5	.5
17	12.0	9.0	8.5	7.0	2.0	1.0	.5	.0	1.5	.5	.5	.5
18	---	---	7.0	6.0	4.0	2.0	.5	.0	2.0	.5	1.0	.5
19	---	---	6.5	5.5	5.0	4.0	.5	.0	1.5	.5	2.5	1.0
20	---	---	7.5	6.0	5.0	4.5	.0	.0	2.0	.0	2.5	.5
21	15.0	13.0	8.5	7.0	4.5	2.5	.5	.0	1.5	.5	2.0	1.5
22	15.0	11.5	7.0	6.0	2.5	1.0	.5	.0	1.5	.5	3.5	1.5
23	14.0	11.5	7.0	5.5	2.0	1.0	.5	.0	2.0	.0	4.0	3.5
24	16.0	11.0	7.0	6.0	4.0	1.0	1.0	.0	2.0	1.0	4.0	3.0
25	16.0	12.5	6.5	5.5	3.5	.5	1.5	.5	2.0	1.0	3.5	3.0
26	17.0	14.5	5.0	3.0	.5	.0	1.0	.0	2.0	1.0	4.0	3.5
27	16.5	14.5	3.0	1.5	.5	.0	.0	.0	1.5	.5	4.0	3.5
28	17.0	14.5	3.0	1.0	.5	.0	.0	.0	2.0	.5	5.5	3.5
29	15.5	12.0	3.0	.5	1.0	.0	.0	.0	---	---	6.0	4.5
30	15.0	11.5	4.5	2.0	1.0	.5	.0	.0	---	---	7.0	4.5
31	15.0	11.0	---	---	1.5	.5	.0	.0	---	---	10.0	7.0
MONTH	19.0	9.0	18.5	.5	5.5	.0	2.5	.0	2.0	.0	10.0	.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	12.5	9.5	15.5	11.0	25.5	22.0	24.5	21.5	27.0	21.5	26.0	20.5
2	10.5	8.0	16.5	11.0	22.5	20.5	21.5	19.5	26.5	22.5	26.0	20.0
3	10.0	7.5	17.5	11.0	21.5	19.0	19.5	18.5	25.5	23.5	26.0	21.5
4	10.5	8.5	13.5	12.0	21.0	17.0	20.0	18.5	26.5	22.0	26.0	22.0
5	11.0	9.5	12.0	11.0	22.0	18.0	21.5	18.0	23.5	19.5	26.5	20.0
6	10.5	10.0	12.0	11.0	22.0	16.5	25.0	18.5	23.0	21.5	27.0	22.0
7	11.5	9.0	14.0	10.0	20.0	18.5	27.0	21.0	23.5	21.5	27.5	23.5
8	10.5	9.5	14.0	12.0	21.0	19.0	27.5	24.0	26.5	21.5	27.5	23.5
9	9.5	8.5	15.5	13.0	23.0	17.0	26.0	22.5	27.0	22.5	26.5	24.5
10	13.0	8.5	14.5	13.0	24.5	18.0	23.5	21.5	26.5	22.5	28.0	23.0
11	12.5	11.5	16.5	13.0	25.5	19.0	24.5	19.5	25.0	21.5	27.0	24.0
12	14.0	10.5	16.5	16.0	23.0	20.0	25.5	18.5	26.5	21.5	25.5	22.5
13	13.0	10.5	16.5	15.5	20.0	16.5	24.5	20.0	28.0	22.0	23.0	21.5
14	13.0	10.0	15.5	14.5	20.5	15.5	26.0	22.5	28.0	22.5	24.5	21.0
15	13.0	9.0	14.5	13.5	20.0	16.5	27.0	22.0	28.0	24.5	25.5	21.5
16	13.0	8.5	15.0	13.0	21.5	17.0	26.0	23.0	28.0	25.5	24.5	22.5
17	13.5	8.5	15.5	13.5	25.0	20.0	26.5	20.5	28.5	23.5	24.5	21.0
18	10.5	9.5	18.0	15.0	26.5	22.0	27.0	20.5	28.5	24.0	27.0	23.5
19	12.5	10.0	19.5	16.0	26.5	22.0	28.5	23.0	29.0	25.5	27.0	24.5
20	10.5	8.5	21.0	18.5	27.0	21.0	29.0	24.5	27.0	23.0	28.0	24.0
21	8.5	7.5	19.5	17.0	26.0	23.0	29.0	25.5	26.0	21.0	27.0	24.5
22	8.5	6.5	18.5	15.5	25.5	20.5	29.5	26.0	27.0	21.5	24.5	22.0
23	8.0	7.0	17.5	16.5	26.0	19.5	27.0	24.5	27.5	22.0	23.5	19.0
24	10.0	8.0	18.0	16.5	26.5	20.5	24.5	22.5	27.0	23.5	23.0	18.5
25	10.5	8.0	20.0	16.5	25.0	21.0	26.5	22.5	27.0	24.5	23.0	19.5
26	13.0	9.0	22.5	18.5	22.0	20.5	28.0	24.5	26.5	23.0	22.5	18.0
27	15.0	9.5	24.5	19.5	26.5	20.5	27.0	25.0	26.0	22.5	23.5	18.0
28	16.5	10.5	26.5	20.5	26.0	21.5	27.5	23.0	27.0	24.0	22.0	18.5
29	17.5	11.5	27.0	22.0	28.0	23.5	25.0	22.5	26.5	23.5	21.0	16.5
30	16.5	12.0	27.0	23.5	27.0	23.5	25.5	22.5	24.5	22.5	21.5	17.0
31	---	---	27.5	23.0	---	---	26.0	21.5	25.5	20.5	---	---
MONTH	17.5	6.5	27.5	10.0	28.0	15.5	29.5	18.0	29.0	19.5	28.0	16.5
YEAR	29.5	.0										

04200550 BLACK RIVER BELOW ELYRIA, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.0	3.7	4.7	2.9	11.8	11.6	12.6	12.2	13.7	13.1	11.4	10.3
2	7.7	5.3	5.5	2.9	12.0	11.7	12.5	12.2	13.6	13.3	11.3	10.3
3	8.1	6.7	4.9	2.1	11.7	11.4	12.6	12.2	13.7	13.4	11.1	10.7
4	7.7	6.3	---	---	11.6	11.5	12.5	12.1	13.5	13.4	11.3	10.9
5	7.8	5.9	5.8	4.3	11.6	11.3	12.3	11.4	13.5	13.2	11.4	11.1
6	8.6	5.4	5.1	2.8	12.3	11.7	12.1	11.6	13.2	12.8	11.2	10.7
7	8.3	6.5	4.9	2.0	12.7	12.3	11.9	11.4	12.9	12.6	11.3	10.1
8	7.7	5.7	5.2	3.5	12.7	12.2	---	---	12.7	12.3	11.2	10.9
9	8.3	6.6	6.0	3.5	12.3	12.0	---	---	12.4	12.1	11.1	10.8
10	8.7	7.1	5.0	3.0	12.4	12.1	---	---	12.2	12.0	---	---
11	7.5	6.2	6.1	4.5	12.5	12.2	---	---	12.3	12.0	---	---
12	8.8	6.8	7.3	5.3	12.2	11.7	---	---	12.3	12.1	---	---
13	8.7	6.7	8.0	7.1	11.7	11.5	---	---	12.2	11.7	---	---
14	8.3	6.7	9.5	7.7	13.4	11.6	12.7	12.2	11.8	11.6	---	---
15	9.3	6.7	7.8	6.4	14.3	13.4	12.9	12.6	11.9	11.6	13.9	13.1
16	9.0	7.2	6.5	4.9	14.4	13.3	12.9	12.5	11.9	11.5	14.0	13.8
17	9.0	7.3	10.6	4.7	13.3	12.3	12.7	12.3	11.6	11.3	13.7	13.1
18	---	---	11.4	10.7	12.3	11.6	12.4	12.1	11.5	11.3	13.4	12.7
19	---	---	11.6	11.3	11.6	11.2	12.4	12.1	11.5	11.3	12.8	12.1
20	---	---	11.4	10.7	11.2	10.9	12.2	11.7	11.5	11.0	12.8	11.9
21	8.7	6.3	10.7	10.1	11.4	11.1	11.9	11.7	11.4	11.0	12.2	11.2
22	9.3	5.4	10.7	10.3	11.7	11.5	12.0	11.8	11.4	10.9	11.9	11.3
23	8.9	5.7	10.7	10.2	11.7	11.4	12.0	11.6	11.1	10.6	11.6	10.6
24	9.2	6.3	10.7	10.2	11.6	10.7	11.8	11.2	11.0	10.6	11.3	10.4
25	8.4	5.3	10.7	9.8	11.9	10.9	13.0	11.0	11.1	10.6	11.1	10.1
26	7.7	4.5	11.1	10.2	12.3	12.0	13.3	12.4	11.4	11.1	11.1	9.9
27	6.6	4.0	11.8	11.2	12.0	11.7	14.0	13.3	11.4	11.1	11.3	10.8
28	6.8	3.9	12.0	11.6	11.9	11.4	14.1	14.0	11.4	10.9	11.2	10.3
29	6.8	4.0	11.9	11.3	12.9	11.5	14.2	14.1	---	---	10.6	9.8
30	6.5	4.8	11.6	10.9	12.9	12.6	14.4	14.0	---	---	10.4	9.2
31	6.3	4.2	---	---	12.7	12.5	14.3	13.2	---	---	9.4	8.3
MONTH	9.3	3.7	12.0	2.0	14.4	10.7	14.4	11.0	13.7	10.6	14.0	8.3

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.0	7.6	---	---	7.3	4.9	5.9	4.6	4.7	1.1	3.9	2.5
2	10.4	9.8	12.8	7.9	6.8	6.1	5.9	4.0	3.2	.9	3.6	2.0
3	10.7	10.2	12.5	7.8	7.1	6.0	7.4	5.5	5.9	.0	4.7	2.4
4	10.7	10.3	11.5	8.0	7.4	6.4	7.6	7.4	4.2	3.0	5.3	3.1
5	10.7	10.3	8.5	7.9	7.6	6.1	7.8	7.2	7.1	3.0	4.8	3.0
6	10.4	10.2	10.6	8.0	7.4	5.6	7.2	6.1	6.5	4.9	3.5	1.8
7	10.7	10.3	11.3	9.1	6.2	3.8	6.7	5.4	5.7	.3	3.3	.9
8	11.1	10.2	9.8	7.8	7.0	4.3	7.1	5.3	7.3	3.4	2.1	.8
9	10.5	10.2	9.5	7.7	7.9	4.2	7.9	5.3	7.9	3.7	3.9	.2
10	10.5	9.7	---	---	6.9	2.5	8.0	5.5	8.1	3.9	4.8	1.5
11	9.9	9.5	---	---	10.2	4.3	8.3	5.5	7.5	5.2	4.8	1.9
12	10.3	9.5	---	---	7.8	4.1	8.5	5.2	8.9	5.1	6.0	1.4
13	10.3	9.5	---	---	6.7	3.9	7.9	5.1	9.3	5.1	5.5	4.4
14	11.0	9.4	---	---	8.8	6.0	9.0	4.4	9.8	5.0	4.3	.0
15	11.4	9.3	9.4	9.3	9.2	5.9	9.8	4.3	8.7	4.1	4.7	1.5
16	12.2	9.1	9.8	9.3	9.5	6.0	9.3	4.5	6.5	3.3	5.2	2.2
17	12.9	9.3	9.8	9.1	10.5	5.1	11.5	5.3	4.9	2.0	5.9	1.3
18	10.8	8.5	9.4	8.8	10.9	5.1	10.3	5.0	5.8	2.5	5.7	2.6
19	11.4	8.3	9.3	8.3	8.7	3.3	9.5	4.1	7.5	2.0	5.6	3.6
20	11.4	9.6	8.5	7.6	8.3	4.5	8.0	4.2	7.5	3.6	5.2	2.8
21	11.8	11.0	9.0	7.5	7.3	4.0	6.2	3.3	7.3	4.5	5.3	2.5
22	12.1	11.2	8.9	8.4	7.0	3.6	6.9	2.6	5.5	3.4	5.7	2.7
23	11.6	10.8	8.6	8.0	6.9	4.0	5.1	1.1	4.9	2.4	6.2	4.0
24	11.2	9.5	8.6	6.7	7.7	3.9	6.7	4.8	4.3	1.8	6.4	4.8
25	10.6	9.6	8.9	7.9	8.4	4.4	6.3	4.2	3.9	1.4	6.3	5.0
26	11.0	9.6	8.4	7.2	6.2	4.5	6.3	2.9	7.0	1.7	5.4	4.4
27	11.7	9.3	8.8	7.1	6.0	4.6	6.3	3.6	6.1	3.0	5.8	3.6
28	12.5	9.0	8.9	6.9	7.5	5.5	7.6	4.0	4.9	2.3	5.6	3.7
29	12.9	8.0	9.0	6.4	6.8	5.1	6.7	3.3	4.7	2.5	5.6	3.2
30	---	---	8.6	4.5	5.8	4.6	9.3	4.5	3.8	1.6	7.0	3.8
31	---	---	8.6	4.5	---	---	7.0	1.0	4.8	2.6	---	---
MONTH	12.9	7.6	12.8	4.5	10.9	2.5	11.5	1.0	9.8	.0	7.0	.0
YEAR	14.4	.0										

04201500 ROCKY RIVER NEAR BEREA, OH

LOCATION.--Lat 41°24'24", long 81°53'18", in T.6 N., R.15 W., Cuyahoga County, Hydrologic Unit 04110001, on right bank at downstream side of Cedar Point Road Bridge in Rocky River Reservation, just downstream from confluence of East and West Branches, and 3.0 mi (4.8 km) northwest of Berea.

DRAINAGE AREA.--267 mi² (692 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to September 1935, September 1943 to current year. Monthly discharge only for October 1923, published in WSP 1307.

REVISED RECORDS.--WSP 1437: 1924, 1925(M), 1926, 1927(M), 1928-29, 1930-35(M), 1945. WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 649.90 ft (198.089 m) National Geodetic Vertical Datum of 1929 (Cuyahoga County bench mark). Prior to Sept. 30, 1935, nonrecording gage at same site and datum.

REMARKS.--Records good except those for the winter period, which are fair. Some regulation at low flow by small reservoirs on East Branch. Water-quality data collected at this site 1964 to 1977.

AVERAGE DISCHARGE.--47 years, 261 ft³/s (7.391 m³/s), 13.28 in/yr (337 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,400 ft³/s (606 m³/s) Jan. 22, 1959, gage height, 14.10 ft (4.298 m), from rating curve extended above 11,000 ft³/s (312 m³/s) on basis of contracted-opening measurement of peak flow; maximum gage height, 18.6 ft (5.67 m) June 29, 1924 (backwater caused by tornado); minimum daily discharge, 0.2 ft³/s (0.006 m³/s) Sept. 2, 1932, Aug. 22, 27, 30, 1933.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 20.9 ft (6.37 m).

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 4,000 ft³/s (120 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 15	0400	*12300	348	*8.92	2.719	Mar. 15	0600	9640	273	7.80	2.377

Minimum daily discharge, 18 ft³/s (0.51 m³/s) Sept. 8, 9, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	53	2750	115	450	77	380	103	174	47	26	27
2	50	56	871	110	380	76	248	94	110	94	26	25
3	51	53	380	105	320	75	775	87	90	530	146	20
4	50	53	280	105	280	75	955	74	78	195	94	19
5	47	94	252	105	250	75	1530	156	75	105	57	19
6	44	94	240	105	220	75	839	168	72	75	42	19
7	40	294	230	129	200	75	1090	128	68	61	54	19
8	63	457	220	600	180	75	527	111	70	52	233	18
9	135	176	210	560	160	76	309	570	74	46	120	18
10	144	235	205	480	140	78	243	359	70	42	266	19
11	83	501	205	400	130	190	314	183	61	39	123	18
12	61	226	205	350	120	500	476	180	56	37	62	61
13	51	239	404	300	110	807	266	544	70	34	45	67
14	45	299	6540	250	105	3720	194	1490	150	34	37	53
15	44	270	8290	230	100	7320	167	804	80	44	33	74
16	98	815	1830	205	98	2750	144	921	68	43	30	47
17	200	1850	1000	180	94	1560	129	536	56	34	27	51
18	138	791	700	170	90	888	127	351	50	30	26	66
19	116	330	520	160	88	880	346	243	59	27	27	50
20	325	267	400	155	86	1790	1830	207	52	27	76	37
21	179	180	330	145	84	2720	1500	660	47	26	59	32
22	106	165	280	145	82	2200	768	385	45	23	38	29
23	79	155	260	145	80	948	404	184	40	60	28	25
24	66	140	230	300	79	554	304	2120	36	116	26	23
25	61	135	200	501	78	410	257	874	34	73	25	23
26	60	130	180	1960	78	1070	200	388	1250	45	23	22
27	55	130	170	2200	78	2090	167	190	500	37	22	22
28	55	130	160	1790	78	888	132	140	113	65	22	22
29	53	158	145	1400	---	514	113	180	76	39	28	22
30	51	501	135	992	---	341	106	138	55	33	25	48
31	51	---	125	600	---	309	---	385	---	29	32	---
TOTAL	2649	8917	27947	14992	4238	33206	14850	13221	3779	2142	1878	995
MEAN	85.5	297	902	484	151	1071	495	426	126	69.1	60.6	33.2
MAX	325	1850	8290	2200	450	7320	1830	2120	1250	530	266	74
MIN	40	53	125	105	78	75	106	74	34	23	22	18
CFSM	.32	1.11	3.38	1.81	.57	4.01	1.85	1.60	.47	.26	.23	.12
IN.	.37	1.24	3.89	2.09	.59	4.63	2.07	1.84	.53	.30	.26	.14

CAL YR 1977 TOTAL 110689 MEAN 303 MAX 8290 MIN 17 CFSM 1.14 IN 15.42
WTR YR 1978 TOTAL 128414 MEAN 353 MAX 8290 MIN 18 CFSM 1.32 IN 17.95

04201500 ROCKY RIVER NEAR BEREA, OH--Continued

SUSPENDED-SEDIMENT RECORDS

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
NOV 17...	0645	1790	659	3190	37	47	62
DEC 15...	0630	11800	460	14700	69	73	84
MAR 14...	1830	5090	695	9550	40	54	66

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM
NOV 17...	78	94	99	99	99	100
DEC 15...	92	97	99	100	--	--
MAR 14...	80	91	96	98	100	--

04201500 ROCKY RIVER NEAR BEREA, OH--Continued

SEDIMENT ANALYSES

PERIOD OF RECORD.--1969 to current year.

REMARKS.--Sediment sampling site at bridge 2,400 ft (732 m) downstream from discharge station.

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7	.91	10	1.4	242	1800					---	---
2	7	.94	10	1.5	74	174					---	---
3	7	.96	10	1.4	46	47					---	---
4	8	1.1	10	1.4	34	26					---	---
5	8	1.0	10	2.5	29	20					---	---
6	10	1.2	10	2.5	---	---					---	---
7	10	1.1	89	108	---	---					---	---
8	15	2.6	100	123	---	---					---	---
9	38	14	37	18	---	---					---	---
10	85	33	58	37	---	---					---	---
11	60	13	112	152	---	---					33	17
12	22	3.6	53	32	---	---					93	126
13	10	1.4	21	14	18	20					165	360
14	7	.85	14	11	445	9620					526	6010
15	7	.83	19	14	376	9480					292	5770
16	33	8.7	85	187	100	494					126	936
17	82	44	425	2260	63	170					66	278
18	48	18	74	158	47	89					47	113
19	26	8.1	38	34	37	52					68	143
20	50	44	29	16	35	38					165	797
21	66	32	37	18	34	30					192	1410
22	30	8.6	37	16	---	---					---	---
23	18	3.8	36	15	---	---					---	---
24	14	2.5	34	13	---	---					---	---
25	12	2.0	33	12	---	---					---	---
26	9	1.5	31	11	---	---					---	---
27	6	.89	27	9.5	15	6.9					255	1440
28	8	1.2	18	6.3	15	6.5					---	---
29	9	1.3	14	6.0	15	5.9					---	---
30	10	1.4	79	202	10	3.6					---	---
31	10	1.4	---	---	10	3.4					---	---
TOTAL	---	255.88	---	3483.5	---	---					---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1											15	1.1
2											15	1.0
3											15	.81
4											15	.77
5											10	.51
6											10	.51
7											10	.51
8											10	.49
9											10	.49
10											10	.51
11											10	.49
12											43	7.1
13											25	4.5
14											18	2.6
15											18	3.6
16											21	2.7
17											24	3.3
18											27	4.8
19											33	4.5
20											40	4.8
21											45	3.9
22											48	3.8
23											22	1.5
24											16	.99
25											14	.87
26											11	.65
27											8	.48
28											7	.42
29											4	.24
30											5	.65
31											---	---
TOTAL											---	57.79

04201555 ROCKY RIVER ABOVE SEWAGE TREATMENT PLANT NEAR LAKEWOOD, OH

LOCATION.--Lat 41°28'10", long 81°49'54", Cuyahoga County, Hydrologic Unit 04110001, at bridge on Park Boulevard, in Rocky River Reservation, 3.0 mi (4.8 km) southwest of Lakewood, and 2.9 mi (4.7 km) upstream from mouth.

DRAINAGE AREA.--291 mi² (754 km²).

PERIOD OF RECORD.--October 1977 to September 1978 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	STREAMFLOW (CFS)	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, AIR (DEG C)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (LOW LEVEL) (MG/L)
SEP										
29...	1130	68	68	860	7.9	17.5	18.0	8.0	84	30

DATE	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	HARDNESS (MG/L AS CACO3)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, TOTAL (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)
SEP										
29...	520	250	100	.0	6.9	516	24	540	4.4	.07

DATE	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	ARSENIC TOTAL (UG/L AS AS)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)
SEP									
29...	1.7	1.8	6.2	27	.72	.72	2.2	9	0

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)
SEP									
29...	10	7	630	3	50	<.5	7	0	20

04201555 ROCKY RIVER ABOVE SEWAGE TREATMENT PLANT NEAR LAKEWOOD, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM-FLOW (CFS)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L)
OCT										
26...	1630	83	83	830	8.1	18.0	15.5	9.8	98	20
NOV										
09...	1200	258	258	595	7.9	17.5	16.0	8.8	88	40
18...	1500	963	963	480	8.0	4.0	6.0	10.2	82	38
DEC										
01...	1700	3560	3560	450	7.9	3.0	5.5	11.2	89	65
02...	0800	1550	1550	470	7.7	2.0	6.0	11.2	90	42
14...	1230	10500	10500	480	7.5	7.0	3.0	12.7	94	110
20...	1230	771	771	520	7.8	5.0	5.0	11.8	92	23
JAN										
24...	1130	430	430	1020	7.7	1.0	1.0	11.2	79	26
FEB										
23...	1300	45	45	1140	7.9	-8.0	1.0	9.8	69	30
MAR										
15...	1300	10500	10500	310	7.2	4.5	1.5	13.2	94	50
21...	1200	3100	3100	445	7.7	8.0	5.5	12.2	96	50
24...	1215	560	560	550	8.0	-5.0	4.0	13.0	99	25
28...	1300	900	900	530	7.4	12.0	6.5	12.7	103	25
APR										
12...	1430	465	465	740	8.1	18.0	14.5	11.4	110	25
20...	1400	3100	3100	560	8.0	4.5	10.0	10.8	96	85
21...	1145	2000	2000	440	7.9	2.0	8.0	11.8	99	40
MAY										
03...	1500	117	117	820	8.5	15.0	15.5	13.6	140	25
09...	1400	800	800	740	8.0	16.0	16.0	9.4	94	75
16...	1215	1090	1090	510	7.9	15.0	14.0	10.0	96	35
JUN										
01...	1130	272	272	665	7.8	23.5	22.0	8.1	92	35
JUL										
13...	1130	48	48	910	8.6	22.0	22.5	9.6	110	49
AUG										
08...	1130	414	414	650	7.7	22.0	23.0	7.2	83	82
22...	1030	50	50	1000	7.5	24.0	22.5	9.2	100	14
SEP										
07...	1600	37	37	880	9.0	28.0	27.0	15.6	190	48

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)
OCT									
26...	10	7	1000	24	70	<.5	9	0	10
NOV									
09...	<10	6	1700	6	100	<.5	4	0	20
18...	20	11	--	21	--	<.5	--	--	--
DEC									
01...	20	20	--	17	--	<.5	--	--	--
02...	<10	10	--	10	--	<.5	--	--	--
14...	40	46	--	77	--	<.5	--	--	--
20...	20	8	1600	14	100	<.5	18	0	30
JAN									
24...	<10	5	290	0	140	<.5	6	0	20
FEB									
23...	<10	10	200	0	170	<.5	8	0	20
MAR									
15...	10	37	--	31	--	<.5	--	--	--
21...	10	25	16000	33	300	<.5	22	0	90
24...	10	6	--	8	--	<.5	--	--	--
28...	20	9	--	11	--	<.5	--	--	--
APR									
12...	<10	9	1700	0	140	<.5	11	0	20
20...	20	38	--	54	--	<.5	--	--	--
21...	10	20	--	17	--	<.5	--	--	--
MAY									
03...	30	6	510	9	70	<.5	6	0	10
09...	20	25	--	57	--	<.5	--	--	--
16...	10	9	--	15	--	<.5	--	--	--
JUN									
01...	10	7	2200	3	100	<.5	13	0	40
JUL									
13...	20	4	540	0	70	.5	8	0	10
AUG									
08...	30	16	--	27	--	<.5	--	--	--
22...	20	4	730	2	180	<.5	10	0	10
SEP									
07...	10	3	380	2	90	<.5	15	0	20

04201555 ROCKY RIVER ABOVE SEWAGE TREATMENT PLANT NEAR LAKEWOOD, OH--Continued

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD-NESS (MG/L AS CACO3)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, TOTAL (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)
OCT										
26...	1200	250	96	.2	4.1	514	38	552	3.8	.44
NOV										
09...	11000	200	56	.5	7.0	396	60	456	1.5	.22
18...	--	--	44	--	7.1	299	164	463	1.9	.01
DEC										
01...	--	--	53	--	6.1	288	445	733	1.5	.11
02...	--	--	52	--	6.6	268	216	484	1.6	.14
14...	--	--	76	--	3.8	282	1170	1450	1.5	.31
20...	16000	170	55	.2	7.1	313	74	387	1.7	.02
JAN										
24...	110	270	160	.2	8.9	595	27	622	2.1	2.8
FEB										
23...	560	290	190	.3	8.6	694	52	746	2.7	2.9
MAR										
15...	--	--	39	--	4.2	212	409	621	1.6	.22
21...	8200	130	56	.2	5.9	277	526	803	1.4	.30
24...	--	--	62	--	6.5	327	81	408	1.3	.43
28...	--	--	61	--	6.5	304	159	463	1.4	.34
APR										
12...	2200	230	83	.2	4.7	442	39	481	1.1	.49
20...	--	--	70	--	5.2	320	750	1070	1.4	.35
21...	--	--	43	--	5.6	257	235	492	1.0	.18
MAY										
03...	180	270	110	.3	.8	511	35	546	2.5	.72
09...	--	--	92	--	2.3	431	376	807	1.3	.40
16...	--	--	47	--	5.7	323	157	480	1.0	.20
JUN										
01...	1800	230	62	.3	5.3	420	76	496	2.2	.39
JUL										
13...	350	260	110	.3	.5	558	47	605	3.8	.05
AUG										
08...	--	--	73	--	5.8	393	483	876	2.3	.11
22...	2000	240	130	.4	2.6	576	37	613	3.0	.39
SEP										
07...	180	--	120	.6	.5	552	52	604	4.7	.02

DATE	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	ARSENIC TOTAL (UG/L AS AS)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)
OCT									
26...	2.0	2.4	6.2	27	.85	.73	2.2	1	1
NOV									
09...	1.6	1.8	3.3	15	.46	.33	1.0	2	0
18...	--	--	--	--	.28	.03	.09	1	1
DEC									
01...	--	--	--	--	.51	.05	.15	2	1
02...	--	--	--	--	.24	.07	.21	1	1
14...	--	--	--	--	.96	.10	.31	2	0
20...	.37	.39	2.1	9.3	.18	.08	.25	1	1
JAN									
24...	.10	2.9	5.0	22	.38	.29	.89	0	0
FEB									
23...	1.8	4.7	7.4	33	.43	.33	1.0	1	0
MAR									
15...	--	--	--	--	.31	.02	.06	2	0
21...	1.6	1.9	3.3	15	.38	.07	.21	2	0
24...	--	--	--	--	.17	.07	.21	1	0
28...	--	--	--	--	.20	.16	.49	1	0
APR									
12...	1.0	1.5	2.6	12	.28	.17	.52	1	0
20...	--	--	--	--	.27	.08	.25	4	0
21...	--	--	--	--	.24	.05	.15	2	0
MAY									
03...	1.4	2.1	4.6	20	.46	.29	.89	3	0
09...	--	--	--	--	.77	.21	.64	2	0
16...	--	--	--	--	.20	.10	.31	1	0
JUN									
01...	1.4	1.8	4.0	18	.53	.39	1.2	2	0
JUL									
13...	2.5	2.5	6.3	28	.83	.22	.67	2	0
AUG									
08...	--	--	--	--	.96	.24	.74	3	0
22...	1.9	2.3	5.3	23	.83	.23	.71	5	2
SEP									
07...	2.7	2.7	7.4	33	1.2	.96	2.9	5	2

04202000 CUYAHOGA RIVER AT HIRAM RAPIDS, OH

LOCATION.--Lat 41°20'26", long 81°10'01", in T.5 N., R.7 W., Portage County, Hydrologic Unit 04110002, on left bank at downstream side of bridge on Winchell Road at Hiram Rapids, 0.6 mi (1.0 km) downstream from Black Brook.

DRAINAGE AREA.--151 mi² (391 km²).

PERIOD OF RECORD.--August 1927 to December 1935 (published as "near Hiram"), October 1944 to current year.

REVISED RECORDS.--WSP 1054: 1945. WSP 1437: 1931. WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,087.46 ft (331.458 m) National Geodetic Vertical Datum of 1929, unadjusted. Prior to Aug. 26, 1927, nonrecording gage and Aug. 26, 1927, to Dec. 31, 1935, water-stage recorder, at site 2.8 mi (4.5 km) downstream at different datum. Oct. 20, 1944, to Oct. 22, 1946, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter periods, which are fair. Flow regulated by East Branch Reservoir. usable capacity, 4,140 acre-ft (5.10 hm³), 14.6 mi (23.5 km) upstream since 1939 and by LaDue Reservoir, usable capacity, 18,110 acre-ft (22.3 hm³), 9.8 mi (15.8 km) upstream since 1961. Water-quality data collected at this site 1965 to 1977.

AVERAGE DISCHARGE.--42 years, 204 ft³/s (5.777 m³/s), 18.35 in/yr (466 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,670 ft³/s (104 m³/s) Jan. 23, 1959, gage height, 8.11 ft (2.472 m), from rating curve extended above 2,600 ft³/s (73.6 m³/s); minimum daily, 6.6 ft³/s (0.19 m³/s) Sept. 10, 1933.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,490 ft³/s (70.5 m³/s) Dec. 16, gage height, 6.36 ft (1.939 m); minimum daily, 25 ft³/s (0.71 m³/s) Aug. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	115	148	297	350	380	130	525	112	129	34	72	89
2	97	146	407	300	350	130	425	97	145	31	69	87
3	89	146	597	250	320	130	392	99	152	91	68	82
4	98	148	624	210	300	130	450	85	139	103	77	79
5	117	145	530	180	280	130	500	90	119	104	101	76
6	129	144	454	190	260	130	530	122	90	94	105	71
7	129	170	394	200	240	130	560	132	68	80	104	67
8	117	199	411	237	220	130	590	128	66	68	101	65
9	133	215	321	334	210	130	560	147	66	57	100	63
10	146	242	368	719	200	130	500	180	63	47	100	64
11	160	276	386	1090	190	138	450	199	61	38	111	63
12	178	302	388	1230	180	147	400	205	67	32	103	63
13	188	348	308	1000	167	175	350	223	66	39	77	72
14	180	376	576	900	160	318	320	258	57	61	52	74
15	171	388	1250	700	150	625	280	314	51	101	36	75
16	158	469	2310	550	156	818	250	401	46	106	26	72
17	144	591	2340	450	153	1030	230	435	56	107	25	69
18	138	699	1960	370	150	1070	220	425	75	106	54	79
19	141	764	1670	320	150	978	230	379	80	103	63	126
20	142	705	1490	270	150	983	260	322	80	101	103	154
21	139	594	1340	240	150	1130	430	294	102	99	140	160
22	136	487	1120	220	150	1510	420	255	118	96	138	141
23	132	402	922	210	150	1850	370	227	119	100	113	111
24	126	333	735	200	149	1710	300	239	105	104	83	92
25	120	279	708	210	147	1360	260	251	85	92	66	77
26	118	237	724	300	140	1050	234	266	84	86	58	67
27	154	201	686	400	140	1020	202	263	85	83	54	62
28	161	177	636	430	140	1060	177	233	70	85	51	59
29	159	163	490	440	---	1030	156	196	54	80	51	56
30	156	161	450	430	---	851	134	164	42	80	58	56
31	152	---	400	400	---	675	---	137	---	78	81	---
TOTAL	4323	9655	25292	13330	5532	20828	10705	6878	2540	2486	2440	2471
MEAN	139	322	816	430	198	672	357	222	84.7	80.2	78.7	82.4
MAX	188	764	2340	1230	380	1850	590	435	152	107	140	160
MIN	89	144	297	180	140	130	134	85	42	31	25	56
MEAN+	139	322	817	430	197	673	357	222	84.4	79.1	77.8	80.9
CFSM+	.92	2.13	5.41	2.85	1.30	4.46	2.36	1.47	.56	.52	.52	.54
IN.+	1.06	2.38	6.23	3.28	1.35	5.13	2.63	1.69	.62	.60	.59	.60

CAL YR 1977 TOTAL 101041 MEAN 277 MAX 2340 MIN 25 MEAN+ 277 CFSM+ 1.83 IN.+ 24.86
WTR YR 1978 TOTAL 106480 MEAN 292 MAX 2340 MIN 25 MEAN+ 292 CFSM+ 1.93 IN.+ 26.19

+ Adjusted for change in contents of East Branch and LaDue Reservoirs.

04204000 LITTLE CUYAHOGA RIVER AT MOGADORE, OH

LOCATION.--Lat 41°03'47", long 81°23'38", in T.1 N., R.10 W., Summit County, Hydrologic Unit 04110002, on left bank at upstream side of bridge on State Highway 532, 500 ft (152 m) downstream from Mogadore Reservoir, 0.8 (1.3 km) upstream from Wingfoot Lake Outlet, and 0.8 mi (1.3 km) north of Mogadore.

DRAINAGE AREA.--17.3 mi^2 (44.8 km^2), includes unnamed tributary 0.2 mi (0.3 km) downstream.

PERIOD OF RECORD.--February 1946 to September 1978 (discontinued).

REVISED RECORDS.--WSP 1912: Drainage area. WDR OH-70-1 1970: 1969.

GAGE.--Water-stage recorder. Datum of gage is 1,058.74 ft (322.704 m) National Geodetic Vertical Datum of 1929, unadjusted.

REMARKS.--Records fair. Flow regulated by Mogadore Reservoir, usable capacity, 6,540 acre-ft (8.06 hm^3). Water-quality data collected at this site 1965 to 1977.

AVERAGE DISCHARGE.--32 years, 14.6 ft^3/s (0.413 m^3/s).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 276 ft^3/s (7.82 m^3/s) July 11, 1976, gage height, 5.34 ft (1.628 m), from rating curve extended above 92 ft^3/s (2.61 m^3/s) by computation of peak flow over dam; minimum daily, 0.10 ft^3/s (0.003 m^3/s) Oct. 29-31, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 198 ft^3/s (5.61 m^3/s) Dec. 14, gage height, 4.72 ft (1.439 m) from (1.439 m) from rating curve extended as explained above; minimum daily, 1.1 ft^3/s (0.031 m^3/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	4.7	29	22	27	9.7	47	20	13	7.4	13	6.8
2	11	4.4	17	22	26	9.4	40	19	11	9.7	12	6.2
3	10	4.5	16	21	24	9.7	51	19	10	12	13	5.7
4	9.0	4.5	16	20	23	9.4	51	18	9.4	10	12	5.2
5	8.4	4.9	19	19	21	9.4	55	21	8.4	9.4	11	4.7
6	9.0	4.9	28	19	20	9.0	52	20	7.8	9.0	11	4.2
7	8.4	8.8	21	19	19	8.7	56	20	7.8	8.4	13	3.4
8	11	6.0	19	36	18	8.7	46	20	7.8	8.7	14	3.2
9	13	5.4	23	36	17	9.4	41	28	7.1	7.1	14	2.8
10	10	9.3	20	31	16	11	38	23	6.5	6.2	31	2.8
11	10	8.2	18	28	16	12	38	21	6.2	6.2	22	2.6
12	9.7	8.2	16	26	15	25	37	23	6.0	5.7	20	3.2
13	9.0	9.5	18	26	15	28	33	30	6.8	5.2	18	7.1
14	9.0	8.7	143	24	14	102	30	35	5.7	84	17	5.2
15	9.4	9.1	124	23	14	72	28	36	5.5	33	16	5.7
16	8.7	14	103	22	13	66	26	43	5.5	28	15	4.7
17	9.0	24	91	21	13	63	25	38	5.5	23	13	4.4
18	8.7	12	81	20	13	59	25	38	6.8	21	12	4.7
19	8.1	11	67	20	12	56	33	35	19	19	12	5.2
20	8.0	14	65	20	12	53	47	33	11	18	11	4.9
21	7.6	14	56	19	12	63	40	38	10	17	9.7	7.1
22	7.0	12	47	19	11	62	38	33	9.4	21	9.0	6.2
23	6.8	12	40	19	11	56	34	31	9.4	23	9.4	3.2
24	6.5	11	36	20	11	49	32	65	9.0	26	8.7	2.2
25	6.3	11	45	26	11	47	30	46	8.4	21	8.4	2.0
26	6.2	10	35	40	11	56	28	31	11	20	8.1	1.7
27	6.0	7.5	30	37	10	93	25	25	9.7	19	7.8	1.7
28	5.8	8.9	27	36	10	73	23	20	7.8	19	7.4	1.5
29	5.2	9.2	25	34	---	63	22	18	8.1	17	6.8	1.3
30	5.1	15	23	30	---	53	21	15	7.8	15	6.2	1.1
31	4.9	---	22	28	---	50	---	15	---	14	7.4	---
TOTAL	257.8	286.7	1320	783	435	1295.4	1092	877	257.4	543.0	388.9	120.7
MEAN	8.32	9.56	42.6	25.3	15.5	41.8	36.4	28.3	8.58	17.5	12.5	4.02
MAX	13	24	143	40	27	102	56	65	19	84	31	7.1
MIN	4.9	4.4	16	19	10	8.7	21	15	5.5	5.2	6.2	1.1

CAL YR 1977 TOTAL 6169.4 MEAN 16.9 MAX 143 MIN 2.4
WTR YR 1978 TOTAL 7656.9 MEAN 21.0 MAX 143 MIN 1.1

04205700 LITTLE CUYAHOGA RIVER BELOW OHIO CANAL, AT AKRON, OH

LOCATION.--Lat 41°05'40", long 81°31'18", Summit County, Hydrologic Unit 04110002, on right bank 900 ft (274 m) downstream from Ohio Canal and 1.9 mi (3.1 km) upstream from mouth.

DRAINAGE AREA.--59.2 mi^2 (153 km^2).

PERIOD OF RECORD.--October 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 790.64 ft (240.987 m) National Geodetic Vertical Datum of 1929, (levels by the City of Akron).

REMARKS.--Records good. Flow regulated by Mogadore Reservoir 9.7 mi (15.6 km) upstream, usable capacity, 6,540 acre-ft (8.06 hm^3), Wingfoot Lake 12.4 mi (20.0 km) upstream and Springfield Lake 8.8 mi (14.2 km) upstream. Water quality data collected at this site 1973 to 1977.

AVERAGE DISCHARGE.--5 years, 90.6 ft^3 (2.566 m^3/s).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,830 ft^3/s (108 m^3/s) July 11, 1976, gage height, 7.51 ft (2.289 m) from rating curve extended above 800 ft^3/s (22.7 m^3/s) on basis of slope-area measurement at gage height 4.88 ft (1.487 m) and step backwater analysis; minimum daily, 21 ft^3/s (0.59 m^3/s) July 3, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,310 ft^3/s (93.7 m^3/s) July 14, gage height, 6.93 ft (2.112 m), from rating curve extended as explained above; minimum daily, 17 ft^3/s (0.48 m^3/s) Sept.26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	125	19	165	65	96	57	91	61	83	50	54	31
2	97	19	92	67	93	61	77	63	80	122	60	27
3	58	19	92	67	90	62	150	69	86	101	84	33
4	62	20	83	65	88	59	129	72	62	82	53	34
5	44	18	101	65	77	59	135	83	46	70	45	36
6	47	18	137	65	73	61	140	73	43	58	46	35
7	40	132	120	70	73	59	140	69	65	56	61	34
8	73	25	71	187	73	61	98	85	58	65	53	34
9	103	20	86	167	73	70	90	167	58	57	136	34
10	50	83	79	116	72	86	107	98	47	39	164	34
11	46	58	54	110	70	98	137	94	42	36	90	42
12	37	55	47	100	69	167	114	127	77	43	80	73
13	33	55	83	100	69	137	112	165	58	43	75	65
14	40	46	685	88	70	475	98	177	47	594	60	38
15	41	38	336	79	67	267	93	180	57	128	50	41
16	51	92	219	80	67	182	91	177	54	93	44	31
17	41	160	185	80	66	162	90	142	53	69	40	31
18	36	79	177	82	65	155	101	124	133	70	36	27
19	28	64	140	66	62	152	160	114	216	83	38	33
20	22	57	152	65	62	150	185	155	101	65	40	37
21	20	79	142	74	53	200	135	152	73	140	38	42
22	19	57	122	80	63	172	120	124	54	92	38	42
23	20	44	112	77	66	135	112	120	57	185	33	35
24	22	50	120	76	61	116	110	354	67	130	32	33
25	20	54	175	133	59	137	105	182	56	80	31	24
26	24	52	107	225	58	231	100	127	110	80	29	17
27	20	25	94	114	58	305	96	114	76	123	29	30
28	20	20	88	105	49	177	94	100	73	92	31	32
29	19	20	69	107	---	110	86	94	69	80	30	31
30	18	107	52	112	---	96	82	124	62	74	32	114
31	19	---	62	96	---	100	---	105	---	56	41	---
TOTAL	1295	1585	4247	2983	1942	4359	3378	3891	2163	3056	1673	1150
MEAN	41.8	52.8	137	96.2	69.4	141	113	126	72.1	98.6	54.0	38.3
MAX	125	160	685	225	96	475	185	354	216	594	164	114
MIN	18	18	47	65	49	57	77	61	42	36	29	17

CAL YR 1977 TOTAL 29877 MEAN 81.9 MAX 685 MIN 18
WTR YR 1978 TOTAL 31722 MEAN 86.9 MAX 685 MIN 17

04206000 CUYAHOGA RIVER AT OLD PORTAGE, OH

LOCATION.--Lat 41°08'08", long 81°32'50", Summit County, Hydrologic Unit 04110002, on right bank 230 ft (70 m) upstream from North Portage Path bridge at Old Portage, 1.2 mi (1.9 km) downstream from Little Cuyahoga River, and 4 mi (6 km) northwest of Akron City Hall.

DRAINAGE AREA.--404 mi² (1,046 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1921 to December 1935, March 1939 to current year.

REVISED RECORDS.--WSP 1307: 1924(M). WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 740.11 ft (225.586 m) National Geodetic Vertical Datum of 1929, unadjusted. Prior to Dec. 21, 1923, nonrecording gage at same site and datum.

REMARKS.--Records good. Natural flow of stream affected by diversions, storage reservoirs and power plants. At Lake Rockwell, 17.7 mi (28.5 km) upstream from gage, an average of 78 ft³/s (2.21 m³/s) was diverted for municipal supply of city of Akron. Sewage from city enters river 2.9 mi (4.7 km) downstream from station. Some diversion from the Tuscarawas drainage into this basin at Portage Lakes (see REMARKS for station 03116000 in volume 1 of this report).

AVERAGE DISCHARGE.--53 years, 420 ft³/s (11.89 m³/s).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,820 ft³/s (221 m³/s) July 11, 1976, gage height, 12.28 ft (3.743 m), from rating curve extended above 3,900 ft³/s (110 m³/s) on basis of contracted-opening estimate at gage height 11.54 ft (3.517 m), at site with drainage area of 488 mi² (1,264 km²) adjusted to gaging station by drainage-area relation; minimum daily, 26 ft³/s (0.736 m³/s) Sept. 2, 1945, July 5, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,760 ft³/s (106 m³/s) Dec. 18, gage height, 9.36 ft (2.853 m) from rating curve extended as explained above; minimum daily, 91 ft³/s (2.58 m³/s) Sept. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	317	184	940	550	728	291	1190	389	362	141	150	119
2	323	285	1000	555	722	287	961	221	317	257	150	109
3	282	285	936	442	688	296	1040	193	317	290	225	113
4	368	295	1030	363	631	[illegible]	1160	193	292	305	157	111
5	350	277	1140	399	586	281	1300	249	270	285	139	119
6	353	277	1190	411	542	266	1310	242	248	245	146	115
7	344	536	985	415	501	272	1420	222	243	204	206	113
8	401	344	771	764	479	274	1410	240	245	192	240	111
9	509	326	741	1000	426	295	1260	459	225	164	395	109
10	392	464	653	683	395	339	1110	472	191	130	606	103
11	363	446	660	767	383	376	1010	475	178	109	422	137
12	371	449	630	942	383	548	890	543	233	115	413	177
13	359	446	729	1070	407	632	771	666	222	111	365	175
14	353	434	2540	1030	379	1840	670	789	177	1230	297	124
15	350	536	2940	895	354	2480	604	835	187	326	223	130
16	362	749	2860	783	357	2230	541	1090	189	262	182	107
17	353	1170	3180	690	360	2150	512	1100	158	257	168	103
18	341	1150	3670	534	344	1930	532	1030	310	290	148	101
19	320	1090	3180	538	326	1730	583	932	557	326	148	119
20	311	1120	2610	491	320	1700	923	862	344	272	170	144
21	280	1130	2260	474	307	1860	898	874	257	297	144	189
22	188	976	1930	465	309	2090	817	737	228	252	133	206
23	130	800	1580	425	313	2140	802	637	216	356	126	189
24	130	683	1430	427	306	2270	749	986	220	353	130	161
25	130	613	1540	557	299	2230	680	885	204	270	137	135
26	293	532	1180	880	292	2130	606	712	295	257	128	103
27	295	452	942	886	289	2400	522	650	270	275	117	97
28	282	407	914	741	281	2110	473	611	232	295	117	97
29	177	362	844	782	---	1770	463	542	211	232	117	91
30	164	522	791	785	---	1630	425	499	173	208	117	177
31	164	---	712	738	---	1420	---	446	---	175	139	---
TOTAL	9355	17340	46558	20482	11707	40598	25612	18781	7571	8481	6355	3894
MEAN	302	578	1502	661	418	1310	854	606	252	274	205	129
MAX	509	1170	3670	1070	728	2480	1420	1100	557	1230	606	206
MIN	130	184	630	363	281	266	425	193	158	109	117	91

CAL YR 1977 TOTAL 196095 MEAN 537 MAX 3670 MIN 95
WTR YR 1978 TOTAL 216724 MEAN 594 MAX 3670 MIN 91

04206000 CUYAHOGA RIVER AT OLD PORTAGE, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to 1967, 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1970 to current year.
pH: October 1970 to current year.
WATER TEMPERATURES: October 1970 to current year.
DISSOLVED OXYGEN: October 1970 to current year.
SUSPENDED SEDIMENT DISCHARGE: March 1972 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 3,000 micromhos Aug. 4, 1977; minimum, 120 micromhos July 20, 1973.
pH: Maximum, 11.4 units Nov. 8, 1974; minimum, 6.2 units July 3, 1973.
WATER TEMPERATURES: Maximum, 34.5°C July 18, 1977; minimum, 0.0°C Jan. 16, 31, Dec. 17, 18, 1972, Jan. 8, 1973, Dec. 10-12, 25-28, 1977, Jan. 3, 9, 10, 16, 22, 23, 26-28, Feb. 6, 19, 20, 1978.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher Jan. 6-10, Feb. 11, 1973; minimum, 0.0 mg/L July 24, 29, 31, Aug. 1, 3-6, 1977.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,060 mg/L July 14, 1978; minimum daily mean, 1 mg/L Sept. 10, 1973, July 31, Aug. 1, 2, 1978.
SEDIMENT LOADS: Maximum daily, 6,310 tons (5,720 tonnes) Apr. 2, 1974; minimum daily, 0.15 ton (0.14 tonne) Sept. 10, 1973.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,600 micromhos Sept. 13; minimum, 276 micromhos July 14.
PH: Maximum recorded 9.0 units Sept. 12; minimum recorded, 6.6 units June 30.
WATER TEMPERATURES: Maximum, 32.5°C Sept. 20; minimum, 0.0°C on several days during winter periods.
DISSOLVED OXYGEN: Maximum, 14.3 mg/L Feb. 28; minimum, 1.2 mg/L Oct. 2, June 12.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,060 mg/L July 14; minimum daily mean 1 mg/L July 31, Aug. 1, 2.
SEDIMENT LOADS: Maximum daily, 4,980 tons (4,520 tonnes) July 14; minimum daily, 0.41 tons (0.37 tonne) Aug. 1, 2.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM
DEC 14...	0955	3170	974	8340	24	34	41	53	72	86	96	100
MAR 14...	0800	1840	876	4350	32	39	51	63	76	86	92	100

04206000 CUYAHOGA RIVER AT OLD PORTAGE, OH--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/_)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	22	19	20	9.9	81	206	24	42	12	24	13	10
2	8	7.0	32	25	54	146	17	25	13	25	13	10
3	5	3.8	11	8.5	54	136	13	16	14	26	37	30
4	4	4.0	9	7.2	49	136	12	12	17	29	20	16
5	5	4.7	8	6.0	39	120	16	17	15	24	9	6.8
6	6	5.7	5	3.7	11	35	9	10	15	22	17	12
7	5	4.6	171	369	21	56	10	11	18	24	17	12
8	9	9.7	20	19	15	31	118	275	17	22	9	6.7
9	73	100	20	18	6	12	69	186	19	22	8	6.4
10	8	8.5	75	94	8	14	33	61	18	19	15	14
11	13	13	20	24	7	12	22	46	19	20	20	20
12	18	18	15	18	8	14	29	74	17	18	47	70
13	17	16	17	20	26	51	35	101	13	14	58	99
14	15	14	15	18	579	4320	27	75	14	14	583	2630
15	17	16	20	29	290	2300	22	53	15	14	252	1690
16	18	18	92	201	235	1810	16	34	22	21	129	777
17	22	21	112	354	238	2040	18	34	48	47	122	708
18	24	22	70	217	192	1900	30	51	15	14	89	464
19	29	25	72	212	159	1370	17	25	8	7.0	99	462
20	22	18	60	181	140	987	13	17	8	6.9	54	248
21	15	11	60	183	149	909	17	22	12	9.9	64	321
22	12	5.4	49	129	100	521	16	20	12	10	98	553
23	5	1.8	27	58	83	354	12	14	17	14	57	329
24	5	1.8	16	30	79	305	15	17	13	11	58	355
25	8	2.8	12	20	62	258	23	35	14	11	64	385
26	48	38	8	11	37	118	25	59	10	7.9	62	357
27	29	23	6	7.3	33	84	21	39	13	10	68	441
28	18	14	6	6.6	47	116	17	34	16	12	61	348
29	6	2.9	5	4.9	28	64	13	27	---	---	51	244
30	7	3.1	56	79	30	64	13	28	---	---	45	198
31	6	2.7	---	---	29	56	10	20	---	---	44	169
TOTAL	---	454.5	---	2363.1	---	18545	---	1480	---	498.7	---	10991.9
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	41	132	7	7.4	12	12	7	2.7	1	.41	2	.64
2	40	104	4	2.4	6	5.1	50	35	1	.41	3	.88
3	77	216	3	1.6	13	11	20	16	30	18	2	.61
4	47	147	5	2.6	12	9.5	13	11	2	.85	2	.60
5	51	179	16	11	6	4.4	11	8.5	2	.75	2	.64
6	43	152	8	5.2	7	4.7	6	4.0	2	.79	2	.62
7	44	169	6	3.6	3	2.0	8	4.4	3	1.7	2	.61
8	42	160	15	9.7	8	5.3	8	4.1	3	1.9	3	.90
9	33	112	240	327	7	4.3	3	1.3	146	156	4	1.2
10	28	84	25	32	4	2.1	3	1.1	155	254	4	1.1
11	32	87	18	23	3	1.4	2	.59	18	21	26	9.6
12	25	60	50	73	41	26	3	.93	16	18	52	25
13	21	44	35	63	23	14	6	1.8	13	13	25	12
14	30	54	37	79	13	6.2	1060	4980	10	8.0	12	4.0
15	24	39	20	45	9	4.5	86	76	10	6.0	14	4.9
16	13	19	42	124	12	6.1	13	9.2	10	4.9	8	2.3
17	12	17	33	98	12	5.1	8	5.6	10	4.5	6	1.7
18	18	26	25	70	158	132	12	9.4	14	5.6	8	2.2
19	40	63	25	63	137	206	16	14	18	7.2	8	2.6
20	40	100	25	58	14	13	5	3.7	8	3.7	5	1.9
21	33	80	25	59	8	5.6	5	4.0	4	1.6	9	4.6
22	23	51	15	30	4	2.5	21	14	5	1.8	6	3.3
23	23	50	10	17	4	2.3	248	482	5	1.7	6	3.1
24	15	30	228	694	3	1.8	30	29	6	2.1	4	1.7
25	13	24	48	115	3	1.7	5	3.6	5	1.8	5	1.8
26	14	23	20	38	26	21	4	2.8	3	1.0	6	1.7
27	12	17	18	32	8	5.8	22	16	2	.63	3	.79
28	12	15	18	30	7	4.4	12	9.6	2	.63	2	.52
29	6	7.2	14	20	3	1.7	4	2.5	2	.63	3	.74
30	7	8.0	15	20	3	1.4	4	2.2	3	.95	189	90
31	---	---	21	25	---	---	1	.47	2	.75	---	---
TOTAL	---	2269.2	---	2178.5	---	522.9	---	5755.49	---	540.30	---	182.25

TOTAL LOAD FOR YEAR: 45781.84 TONS.

04206000 CUYAHOGA RIVER AT OLD PORTAGE, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	732	525	681	612	663	588	471	414	546	531	714	627
2	1120	627	642	600	597	489	564	465	555	534	717	687
3	1170	597	663	612	558	480	561	528	552	543	822	696
4	603	579	633	582	531	453	600	537	558	543	774	720
5	588	573	603	567	633	426	597	531	546	531	750	735
6	588	549	573	549	633	525	624	573	570	534	747	732
7	552	543	558	321	552	504	606	594	567	543	738	726
8	561	531	537	510	522	474	690	546	585	549	738	711
9	555	408	552	522	534	474	594	525	651	573	798	714
10	567	528	573	462	555	480	549	495	645	594	816	735
11	573	555	645	552	489	453	507	489	645	606	801	735
12	573	537	729	627	468	447	489	444	684	618	909	777
13	561	543	726	675	843	459	465	444	648	618	774	678
14	591	558	693	624	861	471	495	462	828	624	669	459
15	606	579	621	525	462	363	462	438	768	693	450	411
16	600	579	552	495	375	357	450	432	750	672	426	378
17	600	555	561	471	354	303	483	447	741	696	378	351
18	744	510	492	468	309	300	525	474	714	678	414	357
19	762	507	495	450	312	294	516	486	702	675	396	375
20	558	534	453	432	321	294	528	489	684	648	384	357
21	570	531	450	417	327	315	573	516	657	612	402	357
22	618	576	453	429	348	321	648	543	708	633	363	315
23	666	621	438	423	357	342	609	570	726	669	318	291
24	708	633	483	429	444	330	711	567	693	675	297	279
25	699	621	495	483	429	375	1130	690	702	666	318	279
26	684	579	645	489	387	369	1310	930	702	666	345	306
27	687	624	567	489	414	378	927	702	699	678	348	324
28	621	558	594	504	423	402	696	546	681	609	339	294
29	648	585	579	543	420	375	---	---	---	---	306	297
30	657	594	762	540	411	369	---	---	---	---	303	291
31	654	591	---	---	417	396	552	531	---	---	339	297
MONTH	1170	408	762	321	851	294	1310	414	828	531	909	279

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	333	315	591	501	627	525	798	768	777	651	891	870
2	348	324	672	534	654	537	801	489	744	711	888	867
3	360	336	702	648	669	636	828	555	729	519	906	882
4	378	345	711	675	657	600	786	750	771	732	933	888
5	363	351	711	609	627	561	750	696	798	765	933	903
6	387	336	729	678	633	564	714	606	795	771	942	903
7	360	345	756	720	738	570	762	612	786	699	948	927
8	348	336	777	642	669	573	768	690	759	729	957	930
9	354	342	753	534	696	612	741	720	747	450	966	945
10	441	345	726	678	690	654	753	654	633	429	978	936
11	450	414	---	---	699	675	810	660	576	540	957	564
12	462	429	---	---	717	513	810	675	567	549	912	624
13	498	453	---	---	708	573	834	702	567	549	1600	693
14	492	474	---	---	765	654	510	276	576	552	933	834
15	504	495	---	---	777	747	654	516	633	573	894	822
16	522	507	---	---	795	717	702	657	651	627	921	894
17	546	510	---	---	810	774	756	627	693	648	930	897
18	564	510	---	---	783	393	708	621	702	633	918	819
19	534	432	---	---	723	378	711	597	723	651	888	837
20	507	453	---	---	756	702	684	549	741	675	894	879
21	465	453	---	---	780	606	639	414	789	747	903	822
22	462	441	---	---	717	609	663	504	780	744	864	834
23	462	444	---	---	747	618	678	360	789	762	846	798
24	468	444	---	---	750	741	681	531	801	762	810	765
25	477	441	480	462	750	714	666	648	786	768	792	684
26	489	456	480	462	735	567	699	657	825	786	747	669
27	540	480	489	474	777	618	789	495	846	819	852	747
28	558	543	507	480	777	621	675	564	861	828	876	834
29	582	546	528	498	786	729	717	678	879	849	876	855
30	588	564	606	528	885	747	702	684	873	861	873	540
31	---	---	627	513	---	---	708	633	870	846	---	---
MONTH	588	315	777	462	885	378	834	276	879	429	1600	540
YEAR	1600	276										

04206000 CUYAHOGA RIVER AT OLD PORTAGE, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.6	7.4	---	---			---	---	8.0	7.7	8.4	7.8
2	7.5	7.4	---	---			---	---	8.0	7.7	8.4	7.9
3	8.0	7.4	---	---			---	---	7.9	7.7	8.4	7.9
4	8.0	7.8	7.9	7.9			---	---	7.7	7.7	8.5	7.9
5	8.0	7.9	8.1	7.9			8.3	8.2	7.8	7.7	8.5	7.9
6	8.1	7.9	8.0	7.9			8.3	8.2	7.9	7.7	8.5	7.9
7	8.2	7.9	8.0	7.7			8.2	8.2	8.0	7.8	8.6	7.9
8	8.0	7.9	7.9	7.7			8.3	8.2	7.8	7.7	8.6	7.9
9	8.1	7.7	7.9	7.6			8.3	8.3	8.0	7.7	8.5	7.9
10	8.1	7.9	7.8	7.6			8.3	8.2	8.1	7.7	8.8	7.9
11	8.2	7.9	7.9	7.8			8.3	8.2	7.9	7.8	8.4	7.9
12	8.1	7.9	8.0	7.8			8.3	8.2	7.9	7.8	8.1	7.9
13	8.1	7.9	7.9	7.8			8.3	8.2	8.0	7.8	8.2	7.9
14	8.1	7.9	7.9	7.8			8.3	8.2	8.0	7.8	8.1	7.8
15	8.1	7.9	7.9	7.8			8.3	8.2	8.0	7.8	7.8	7.8
16	8.2	8.0	8.0	7.7			8.3	8.2	8.0	7.8	7.9	7.8
17	8.1	8.0	8.0	7.7			8.3	8.2	8.1	7.8	8.1	7.7
18	8.1	7.9	7.8	7.8			8.4	8.3	8.1	7.8	7.8	7.7
19	8.1	7.9	7.8	7.7			8.3	8.2	8.1	7.8	7.6	7.7
20	8.2	8.0	7.8	7.7			8.3	8.3	8.1	7.8	7.9	7.6
21	8.2	7.9	7.8	7.7			8.4	8.3	8.1	7.9	7.9	7.7
22	---	---	8.1	7.7			8.4	8.3	8.2	7.9	7.8	7.6
23	---	---	7.8	7.7			8.4	8.3	8.1	7.9	7.8	7.5
24	---	---	7.8	7.7			8.4	8.3	8.2	7.9	7.9	7.6
25	---	---	8.1	7.7			8.5	8.3	8.2	7.9	7.8	7.7
26	---	---	7.8	7.7			8.4	8.2	8.3	7.9	7.8	7.7
27	---	---	7.8	7.7			8.4	8.3	8.4	7.9	7.8	7.3
28	---	---	7.9	7.7			8.4	8.3	8.3	7.8	7.9	7.7
29	---	---	7.7	7.6			---	---	---	---	7.9	7.7
30	---	---	8.1	7.6			---	---	---	---	8.0	7.7
31	---	---	---	---			7.8	7.7	---	---	7.8	7.6
MONTH	8.2	7.4	8.1	7.6			8.5	7.7	8.4	7.7	8.8	7.3

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.8	7.7	---	---	7.7	7.5	7.6	7.3	8.0	7.6	8.1	7.6
2	7.9	7.8	---	---	7.6	7.5	7.6	7.1	8.1	7.6	8.1	7.6
3	7.9	7.7	---	---	7.8	7.6	7.7	7.3	7.8	7.2	8.2	7.6
4	7.8	7.7	---	---	7.8	7.6	7.5	7.4	8.0	7.6	8.2	7.6
5	7.9	7.8	---	---	7.8	7.5	7.7	7.4	7.9	7.6	8.2	7.7
6	7.9	7.8	---	---	7.8	7.6	7.6	7.4	7.8	7.5	8.2	7.6
7	8.1	7.8	---	---	7.6	7.3	7.7	7.4	7.8	7.5	8.4	7.6
8	8.0	7.9	---	---	7.7	7.4	7.7	7.3	8.0	7.6	8.4	7.8
9	8.0	7.9	---	---	8.5	7.5	7.8	7.4	8.1	7.5	8.4	7.8
10	8.2	7.9	---	---	7.8	7.6	7.9	7.3	8.1	7.6	8.4	7.8
11	8.0	7.9	---	---	7.9	7.5	8.1	7.4	7.9	7.8	8.4	7.3
12	8.2	7.9	---	---	8.2	7.2	8.2	7.5	8.0	7.8	9.0	7.6
13	8.3	7.9	---	---	7.7	7.4	8.2	7.5	8.0	7.8	8.0	7.7
14	---	---	---	---	7.8	7.6	7.8	7.3	8.1	7.8	7.9	7.7
15	---	---	---	---	7.8	7.6	7.5	7.4	8.1	7.8	8.0	7.7
16	---	---	---	---	7.6	7.3	7.6	7.4	8.1	7.7	8.1	7.8
17	---	---	---	---	7.7	7.3	7.6	7.5	8.1	7.8	8.0	7.9
18	---	---	---	---	7.7	6.9	7.9	7.5	8.2	7.7	8.0	7.8
19	---	---	---	---	7.7	7.2	8.0	7.6	8.3	7.6	8.1	7.8
20	---	---	---	---	7.6	7.4	8.8	7.6	8.3	7.7	8.2	7.8
21	---	---	---	---	7.5	7.3	8.7	7.5	8.3	7.8	8.3	7.8
22	---	---	---	---	7.6	7.3	7.6	7.2	8.3	7.7	8.4	8.0
23	---	---	---	---	7.6	7.4	7.8	7.3	8.1	7.6	8.4	8.1
24	---	---	---	---	7.8	7.4	8.1	7.5	8.3	7.7	8.4	8.0
25	---	---	7.8	7.6	7.9	7.4	7.9	7.6	8.0	7.6	8.4	8.0
26	---	---	7.8	7.6	7.9	6.9	7.9	7.6	8.2	7.6	8.4	7.9
27	---	---	7.9	7.7	7.5	7.3	7.9	7.4	8.3	7.6	8.4	8.0
28	---	---	7.8	7.6	7.6	7.3	7.9	7.5	8.2	7.5	8.4	8.0
29	---	---	7.7	7.6	7.8	7.3	7.9	7.7	8.1	7.5	8.4	8.0
30	---	---	7.7	7.6	7.8	6.6	8.0	7.7	7.9	7.6	8.7	7.9
31	---	---	7.6	7.4	---	---	8.0	7.7	8.1	7.6	---	---
MONTH	8.3	7.7	7.9	7.4	8.5	6.6	8.8	7.1	8.3	7.2	9.0	7.3
YEAR	9.0	6.6										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04206000 CUYAHOGA RIVER AT OLD PORTAGE, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	22.0	20.0	15.5	12.5	6.5	5.5	2.0	1.0	2.5	1.0	6.0	3.5
2	20.0	17.5	16.0	13.5	5.5	5.0	1.5	.5	3.0	1.5	6.5	3.5
3	19.0	17.5	17.0	13.5	5.0	4.0	1.0	.0	3.0	1.5	6.0	4.0
4	18.5	16.0	16.0	15.5	4.0	3.0	3.5	.5	2.0	.5	5.5	4.0
5	16.5	15.0	17.5	15.0	3.5	1.5	4.5	3.5	1.5	.5	6.0	3.5
6	17.5	15.5	17.0	15.0	2.0	1.0	5.0	4.5	2.0	.0	7.0	3.5
7	17.5	15.5	17.5	15.5	1.5	.5	5.0	4.5	3.0	1.5	7.0	4.0
8	16.5	15.5	17.5	16.5	2.0	.5	5.0	2.5	4.0	2.5	7.5	5.0
9	16.5	14.0	18.5	16.5	2.5	.5	2.5	.0	5.0	2.5	8.0	4.0
10	16.5	13.5	17.5	12.5	.5	.0	1.5	.0	4.5	2.0	7.0	3.5
11	15.5	14.0	12.5	10.5	.5	.0	1.5	.5	4.0	2.0	6.5	4.0
12	14.0	13.5	10.5	8.5	2.0	.0	1.5	.5	3.5	2.0	5.0	3.5
13	14.0	12.5	8.5	7.0	2.5	1.5	1.5	1.0	2.0	1.5	5.0	3.0
14	13.0	12.0	8.5	6.5	2.5	1.0	1.5	.5	3.5	1.5	3.5	2.0
15	14.0	11.5	7.5	7.0	1.0	.5	1.0	.5	4.0	1.0	2.0	1.5
16	12.5	10.5	9.0	7.5	1.0	.5	1.5	.0	3.5	2.0	1.5	1.0
17	12.0	10.5	8.5	8.0	1.0	.5	2.0	1.5	3.5	1.0	1.5	1.0
18	13.5	11.5	7.5	6.5	1.0	1.0	2.0	.5	3.5	1.0	2.0	.5
19	14.0	12.0	6.0	5.5	1.5	1.0	2.0	.5	3.0	.0	2.5	2.0
20	13.5	12.0	6.0	5.5	1.5	1.0	2.5	.5	3.0	.0	3.0	2.0
21	14.0	11.5	7.5	6.5	1.5	1.0	2.0	1.0	3.0	.5	4.0	3.5
22	15.0	12.0	7.0	6.0	1.0	.5	2.0	.0	3.5	2.0	4.0	2.5
23	13.5	12.0	7.5	6.5	1.0	.5	2.5	.0	3.5	.5	4.0	3.5
24	16.0	11.5	7.0	6.5	3.0	1.0	4.0	1.5	3.5	2.0	3.5	2.5
25	16.5	13.5	7.5	6.5	2.0	.0	4.5	4.0	3.5	2.5	3.0	2.5
26	18.0	15.5	6.5	4.5	.5	.0	3.5	.0	3.5	2.5	3.5	2.5
27	16.5	15.0	4.5	3.5	.5	.0	1.0	.0	3.5	1.5	3.5	2.5
28	16.0	14.0	4.0	3.0	1.0	.0	1.0	.0	6.0	2.5	4.5	2.5
29	16.0	13.0	4.5	3.5	2.0	1.0	---	---	---	---	4.5	4.0
30	15.5	12.5	6.5	4.5	2.5	1.5	---	---	---	---	5.0	3.5
31	14.5	11.5	---	---	2.5	1.0	1.5	1.0	---	---	6.5	5.0
MONTH	22.0	10.5	18.5	3.0	6.5	.0	5.0	.0	6.0	.0	8.0	.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.5	6.5	16.0	12.0	29.5	24.0	27.0	25.0	29.5	24.0	28.0	23.0
2	8.0	6.5	17.5	12.0	27.5	24.5	25.0	22.5	30.0	24.5	28.0	22.0
3	7.5	6.0	19.5	12.0	25.5	23.0	24.5	23.0	28.5	25.5	27.5	22.5
4	10.0	7.0	15.0	13.5	24.5	22.0	24.5	23.0	29.5	25.5	27.0	23.0
5	10.5	9.0	15.5	13.5	24.5	21.5	24.5	21.5	28.0	24.0	28.0	21.0
6	10.0	9.0	15.0	14.0	25.5	20.0	28.0	22.0	28.5	26.5	29.5	24.0
7	11.0	9.0	17.0	13.0	24.0	22.0	29.5	24.0	31.0	26.5	29.0	24.5
8	11.0	10.0	15.5	14.0	25.5	22.5	29.0	26.0	31.5	28.0	29.5	24.5
9	10.0	9.0	17.0	14.5	26.5	21.5	28.5	25.0	31.0	25.0	27.5	26.0
10	12.5	9.5	16.0	15.0	28.5	22.0	27.0	25.0	28.0	24.5	28.5	24.0
11	13.5	12.5	---	---	30.0	23.0	28.0	22.5	27.0	25.0	28.5	25.0
12	14.5	11.5	---	---	29.5	25.0	29.0	21.5	27.0	24.5	28.0	24.0
13	13.5	12.0	---	---	25.5	22.0	28.5	22.5	27.5	23.5	26.0	24.0
14	13.5	11.5	---	---	26.5	21.0	24.5	22.0	29.0	24.0	27.0	24.0
15	14.0	11.5	---	---	24.5	21.0	28.0	23.5	30.0	26.0	28.5	25.5
16	13.5	10.5	---	---	26.5	22.0	28.5	25.0	29.5	27.0	26.5	25.0
17	14.5	10.0	---	---	28.5	24.0	29.5	24.0	30.5	26.0	27.5	24.5
18	12.5	12.0	---	---	27.5	24.5	30.0	24.0	31.0	25.5	29.0	25.5
19	15.0	12.0	---	---	27.5	22.5	30.0	25.5	30.5	27.0	31.0	27.5
20	13.0	10.5	---	---	28.5	24.5	30.5	26.0	29.5	26.0	32.5	28.0
21	10.5	9.5	---	---	29.0	26.0	31.0	26.0	30.0	23.5	32.0	28.5
22	11.0	8.5	---	---	29.5	24.5	31.5	26.5	30.5	24.5	28.5	25.5
23	9.5	8.5	---	---	29.5	24.0	30.5	26.5	31.0	25.0	27.0	24.0
24	11.5	9.5	---	---	29.5	24.0	28.5	26.0	30.5	26.0	26.0	22.5
25	12.5	10.0	21.0	20.0	30.0	25.0	30.5	27.0	30.0	27.5	24.0	21.0
26	13.5	10.0	23.5	20.0	27.0	25.0	30.0	27.5	30.0	25.5	24.0	20.5
27	14.5	11.0	24.5	20.5	30.5	26.5	29.5	26.0	29.0	25.0	24.0	19.0
28	16.0	11.5	25.5	22.0	31.0	25.5	30.0	26.5	29.0	26.0	22.0	19.5
29	16.5	13.0	26.5	23.0	31.5	26.5	28.5	25.5	28.5	26.0	22.0	17.0
30	16.5	13.0	26.5	24.0	30.5	26.5	27.0	25.0	26.5	24.5	23.0	18.0
31	---	---	27.5	24.5	---	---	27.5	24.0	27.5	24.0	---	---
MONTH	16.5	6.0	27.5	12.0	31.5	20.0	31.5	21.5	31.5	23.5	32.5	17.0
YEAR	32.5	.0										

04206000 CUYAHOGA RIVER AT OLD PORTAGE, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	3.2	1.7	8.6	7.3	---	---	11.6	11.2	13.3	12.5	13.3	11.1
2	2.5	1.2	8.4	7.3	---	---	11.9	10.9	13.6	11.7	13.3	11.3
3	7.2	1.3	8.1	7.1	---	---	12.3	11.0	12.9	12.3	13.1	10.7
4	8.4	7.2	---	---	---	---	11.6	10.5	13.2	11.8	13.5	11.4
5	8.8	7.9	---	---	---	---	11.2	10.6	13.2	13.0	13.4	11.2
6	8.8	7.8	---	---	---	---	11.0	10.8	13.3	12.7	13.1	10.8
7	9.0	7.7	---	---	---	---	11.4	10.3	12.7	11.7	13.0	10.5
8	8.0	7.7	---	---	---	---	11.7	10.4	12.6	11.7	12.8	10.1
9	8.6	6.2	---	---	---	---	12.3	11.7	13.9	12.2	13.2	10.6
10	8.9	8.0	---	---	---	---	12.3	11.9	13.9	12.3	12.6	10.3
11	8.8	8.0	---	---	---	---	12.3	11.0	13.6	13.1	12.3	10.5
12	9.4	8.3	---	---	---	---	12.3	11.3	13.5	13.2	12.4	10.7
13	9.4	8.7	---	---	---	---	12.0	11.7	13.5	13.1	12.6	10.5
14	9.4	8.7	---	---	---	---	12.5	11.5	13.5	12.8	13.3	11.4
15	9.2	8.7	---	---	12.8	11.7	12.7	12.0	13.4	12.9	14.0	12.3
16	9.9	8.9	---	---	13.2	11.9	12.5	11.1	13.3	12.2	13.9	12.5
17	10.3	9.1	9.5	9.2	12.9	11.7	11.8	11.0	13.5	12.0	13.9	11.9
18	9.9	9.0	9.7	9.3	12.8	11.5	11.9	11.6	13.7	12.4	13.8	12.2
19	9.9	8.9	9.9	9.7	12.7	11.2	11.9	11.4	13.6	12.4	13.2	11.9
20	10.1	9.0	9.8	9.5	12.5	11.3	11.8	11.1	13.8	12.4	13.3	12.2
21	10.4	8.3	9.6	9.3	12.5	11.5	11.6	11.2	13.1	12.2	12.9	11.5
22	9.7	8.6	9.6	9.3	12.2	11.3	12.5	11.4	13.4	11.7	13.3	11.8
23	9.8	8.6	9.4	9.1	12.2	11.2	12.5	10.8	13.2	12.1	13.0	11.9
24	9.9	7.0	9.3	9.2	12.1	10.7	12.1	11.1	13.0	12.0	13.3	11.8
25	9.0	6.7	9.3	8.9	12.3	11.7	11.2	10.4	13.2	11.7	13.5	11.9
26	9.5	7.3	9.7	9.0	12.3	12.0	12.4	11.0	13.2	11.7	13.4	12.1
27	9.0	7.7	9.8	9.4	12.3	11.9	11.9	11.7	13.0	11.3	13.1	12.0
28	9.8	7.9	10.0	9.4	12.2	11.7	12.2	11.8	14.3	10.8	12.7	12.2
29	9.5	7.7	9.7	9.3	11.9	11.5	---	---	---	---	12.4	11.9
30	9.9	7.8	9.5	8.7	11.7	11.4	---	---	---	---	12.2	12.0
31	9.8	7.4	---	---	11.7	10.6	13.4	12.6	---	---	13.0	11.5
MONTH	10.4	1.2	10.0	7.1	13.2	10.6	13.4	10.3	14.3	10.8	14.0	10.1

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	12.8	12.0	12.6	7.7	9.4	8.0	6.8	4.5	8.4	6.0	9.4	5.7
2	12.6	12.1	13.9	7.1	9.2	8.1	6.5	4.8	8.5	5.7	9.6	5.7
3	12.6	11.8	12.7	6.8	9.4	8.1	6.5	5.2	8.6	4.5	9.5	5.6
4	12.5	11.4	10.7	6.4	9.9	8.4	6.9	5.3	8.0	5.6	9.8	5.6
5	11.8	11.1	8.9	6.5	10.4	8.6	7.1	5.8	8.0	5.6	10.1	5.6
6	11.4	10.9	9.2	6.9	10.8	8.5	7.2	5.6	7.1	5.5	9.5	5.4
7	11.8	11.1	11.4	6.9	9.2	5.2	7.5	4.8	6.8	5.2	8.6	5.0
8	11.6	11.1	9.0	5.8	9.6	7.3	7.0	5.0	7.3	5.4	8.2	4.7
9	12.1	11.1	8.1	6.3	10.2	8.0	7.7	4.7	7.7	3.3	8.8	4.5
10	11.6	10.4	8.7	7.4	10.1	7.3	7.8	5.2	8.8	5.8	9.0	5.1
11	10.6	9.7	---	---	10.1	6.8	9.0	5.0	7.1	6.4	9.6	3.9
12	10.8	9.1	---	---	10.0	1.2	9.8	5.0	7.4	6.6	7.5	4.7
13	10.1	9.0	---	---	8.5	6.5	11.2	5.9	7.7	6.5	6.7	5.0
14	10.8	9.0	---	---	9.6	7.7	7.6	5.0	7.5	6.1	6.9	5.8
15	11.1	8.9	---	---	9.9	7.9	7.0	6.0	7.6	5.7	7.3	5.8
16	11.5	9.0	---	---	8.4	6.3	7.0	5.9	7.4	5.5	7.8	6.1
17	11.8	8.0	---	---	8.7	5.9	7.1	6.0	7.5	5.3	8.0	6.3
18	---	---	---	---	8.4	2.3	8.1	6.2	7.8	5.1	7.8	5.8
19	---	---	---	---	7.6	6.5	8.4	6.2	8.2	4.6	8.5	5.8
20	---	---	---	---	7.6	6.4	7.6	6.0	8.6	4.9	8.6	5.9
21	---	---	---	---	7.1	6.1	7.3	3.7	9.2	5.6	8.5	5.8
22	---	---	---	---	7.7	6.3	6.8	4.5	9.2	5.5	8.8	6.5
23	---	---	---	---	7.8	6.1	6.7	3.7	7.8	5.2	9.3	7.3
24	---	---	---	---	8.6	6.3	7.2	6.2	8.3	5.0	9.6	7.4
25	---	---	11.3	9.9	9.1	5.9	7.6	6.0	8.3	4.9	10.0	7.5
26	---	---	10.6	9.7	6.0	2.9	7.1	5.8	9.6	5.4	10.2	7.4
27	11.8	8.6	10.8	9.1	7.1	5.2	7.3	3.6	10.0	5.3	10.5	7.3
28	11.7	8.0	10.6	9.2	7.4	4.7	7.4	5.9	9.4	5.4	10.5	7.3
29	11.9	7.8	10.1	8.8	7.7	4.6	7.4	6.1	8.9	5.1	10.9	7.4
30	12.4	7.8	9.7	7.8	7.4	4.5	7.8	6.1	7.5	5.2	11.0	5.0
31	---	---	9.1	8.2	---	---	8.0	6.1	8.7	5.8	---	---
MONTH	12.8	7.8	13.9	5.8	10.8	1.2	11.2	3.6	10.0	3.3	11.0	3.9
YEAR	14.3	1.2										

04206250 CUYAHOGA RIVER AT IRA, OH

LOCATION.--Lat 41°10'53", long 81°35'00", Summit County, Hydrologic Unit 04110002, on left bank at upstream side of highway bridge on Ira Road at Ira, 1.8 mi (2.9 km) downstream from Yellow Creek, and 2.1 mi (3.4 km) upstream from Furnace Run.

DRAINAGE AREA.--478 mi² (1,238 km²).

PERIOD OF RECORD.--October 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 712.13 ft (217.057 m) National Geodetic Vertical Datum of 1929, (Summit County Engineers Office benchmark).

REMARKS.--Records fair. Natural flow of stream affected by diversions, storage reservoirs and power plants. Some diversion from the Tuscarawas drainage into this basin at Portage Lakes (see REMARKS for station 03116000). Water quality data collected at this site 1973 to 1977.

AVERAGE DISCHARGE.--5 years, 760 ft³/s (21.5 m³/s).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,730 ft³/s (162 m³/s) July 11, 1976, gage height, 13.62 ft (4.157 m) minimum daily, 170 ft³/s (4.81 m³/s) June 15, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 4,000 ft³/s (113 m³s) Dec. 18; minimum daily, 185 ft³/s (5.24; m³/s) Sept. 4, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	404	243	1500	700	864	370	1430	521	540	275	254	218
2	392	357	1280	600	864	368	1140	371	492	456	254	194
3	384	359	1130	555	810	372	1430	333	476	536	412	188
4	444	398	1140	480	752	368	1540	339	444	464	282	185
5	434	366	1310	500	706	356	1790	453	424	432	251	203
6	447	354	1480	538	670	356	1730	415	400	388	247	209
7	428	824	1140	546	626	372	1830	370	428	348	328	203
8	550	503	922	1300	612	384	1720	398	436	328	364	206
9	726	445	864	1290	562	432	1490	794	392	289	468	197
10	524	693	765	860	524	508	1290	664	344	261	842	188
11	494	624	770	900	512	562	1220	640	320	233	552	224
12	467	615	765	1040	508	832	1070	776	396	233	524	326
13	449	620	918	1150	500	954	938	1000	428	233	476	344
14	438	590	3670	1110	480	3190	831	1290	328	1440	416	240
15	434	727	3460	973	460	3480	753	1220	324	504	340	254
16	456	1070	3300	873	460	2960	676	1500	340	388	286	212
17	461	1630	3500	787	460	2690	652	1420	300	380	265	209
18	435	1390	4000	738	440	2400	685	1260	428	396	244	215
19	405	1240	3300	659	420	2190	840	1120	752	448	237	237
20	397	1230	2800	618	400	2200	1330	1040	496	400	265	247
21	375	1200	2300	605	400	2550	1200	1080	412	392	230	293
22	250	1100	2000	579	400	2630	1030	899	360	400	224	304
23	199	933	1800	524	400	2560	966	793	344	472	212	286
24	199	796	1600	546	380	2610	910	1220	348	504	215	251
25	193	725	1800	782	380	2590	827	1080	328	396	227	233
26	357	656	1300	1400	370	2600	743	901	484	376	215	200
27	380	558	1100	1010	370	3190	661	812	432	384	194	194
28	369	520	1000	1010	370	2670	609	764	388	440	206	196
29	257	476	900	997	---	2190	574	696	352	348	206	185
30	227	792	800	954	---	1980	544	684	312	312	215	289
31	231	---	750	882	---	1740	---	640	---	282	251	---
TOTAL	12206	22114	53364	25508	14700	52654	32449	25493	12248	12738	9702	6930
MEAN	394	737	1721	823	525	1699	1082	822	408	411	313	231
MAX	726	1630	4000	1400	864	3480	1830	1500	752	1440	842	344
MIN	193	243	750	480	370	356	544	333	300	233	194	185

CAL YR 1977 TOTAL 257050 MEAN 704 MAX 4000 MIN 173
WTR YR 1978 TOTAL 280106 MEAN 767 MAX 4000 MIN 185

04207100 TINKERS CREEK AT TWINSBURG, OH

LOCATION.--Lat 41°18'41", long 81°26'13", Summit County, Hydrologic Unit 04110002, at bridge on State Highway 82, 4.3 mi (6.9 km) downstream from Pond Brook, at Twinsburg.

DRAINAGE AREA.--48.4 mi² (125.4 km²).

PERIOD OF RECORD.--July 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (JTU)	TRANS-PAR-ENCY (SECCHI DISK) (IN)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)
OCT											
11...	1200	46	505	7.6	11.0	25	14	8.6	77	45	1200
25...	1230	17	640	7.8	11.0	15	24	8.7	78	15	200
NOV											
08...	1600	107	480	7.5	16.0	25	12	6.7	67	45	6800
22...	1530	82	470	7.6	6.5	20	19	10.8	88	28	1900
DEC											
13...	1430	102	540	7.4	2.5	10	18	10.8	78	20	340
21...	1030	295	340	7.5	3.0	25	13	11.7	87	22	1800
JAN											
05...	1600	34	550	7.5	2.0	15	16	12.0	87	25	200
25...	0845	25	760	7.4	1.0	9	14	10.6	75	22	260
FEB											
10...	1400	23	640	7.1	.5	10	26	10.9	76	15	540
15...	1430	27	710	7.5	.0	10	24	10.8	74	19	500
22...	1600	21	750	7.8	1.0	9	--	9.0	63	18	390
MAR											
08...	1530	25	900	7.6	.0	10	22	11.4	78	35	320
22...	0845	539	335	7.5	2.5	55	7.0	12.2	89	20	K550
APR											
04...	1500	275	420	7.5	10.5	40	10	10.2	91	25	1100
18...	1430	42	510	7.9	11.0	15	20	11.2	100	25	60
MAY											
02...	1600	24	570	8.5	13.0	10	31	14.0	130	15	33
17...	1400	310	370	7.5	15.0	25	15	9.1	89	35	1900
31...	1600	22	590	7.5	24.0	20	11	5.7	67	30	120
JUN											
13...	1430	26	680	7.7	18.0	30	12	6.7	70	25	770
28...	0900	20	650	7.5	22.0	30	14	5.2	59	25	320
JUL											
12...	1000	7.3	780	7.7	18.5	25	1.0	6.5	69	29	160
25...	0900	12	685	7.7	22.0	40	6.0	5.7	65	33	520
AUG											
07...	1200	10	770	7.8	21.0	35	10	5.6	62	32	140
21...	1500	8.4	800	7.5	23.5	15	36	7.6	88	11	150
SEP											
06...	1345	4.7	940	7.9	22.0	30	--	7.0	80	18	140
19...	1200	18	785	7.8	23.0	40	9.0	6.2	71	20	1300

04207100 TINKERS CREEK AT TWINSBURG, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA)	MAGNE-SIUM, TOTAL RECOV-ERABLE (MG/L AS MG)	SODIUM, TOTAL RECOV-ERABLE (MG/L AS NA)	POTAS-SIUM, TOTAL RECOV-ERABLE (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	ALKA-LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT											
11...	450	--	--	--	--	--	--	--	--	--	--
25...	80	--	--	--	--	--	--	--	--	--	--
NOV											
08...	9800	--	--	--	--	--	--	--	--	--	--
22...	4500	40	10	29	3.1	126	0	103	5.1	50	56
DEC											
13...	500	--	--	--	--	--	--	--	--	--	--
21...	8500	--	--	--	--	--	--	--	--	--	--
JAN											
05...	87	--	--	--	--	--	--	--	--	--	--
25...	250	--	--	--	--	--	--	--	--	--	--
FEB											
10...	240	--	--	--	--	--	--	--	--	--	--
15...	280	--	--	--	--	--	--	--	--	--	--
22...	150	58	16	48	2.5	200	0	164	5.1	62	94
MAR											
08...	170	--	--	--	--	--	--	--	--	--	--
22...	K21000	--	--	--	--	--	--	--	--	--	--
APR											
04...	1900	--	--	--	--	--	--	--	--	--	--
18...	52	--	--	--	--	--	--	--	--	--	--
MAY											
02...	20	47	14	33	2.0	154	4	133	.8	48	74
17...	1900	--	--	--	--	--	--	--	--	--	--
31...	33	--	--	--	--	--	--	--	--	--	--
JUN											
13...	580	--	--	--	--	--	--	--	--	--	--
28...	450	--	--	--	--	--	--	--	--	--	--
JUL											
12...	73	--	--	--	--	--	--	--	--	--	--
25...	520	--	--	--	--	--	--	--	--	--	--
AUG											
07...	480	63	19	--	--	238	0	195	6.0	59	96
21...	65	--	--	--	--	--	--	--	--	--	--
SEP											
06...	160	--	--	--	--	--	--	--	--	--	--
19...	1700	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)
OCT											
11...	325	46	371	.78	.05	.63	.68	1.5	6.5	.26	0
25...	401	62	463	.91	.03	.84	.87	1.8	7.9	.26	0
NOV											
08...	297	74	371	.75	.02	1.1	1.1	1.9	8.2	.38	0
22...	307	32	339	.58	.10	.69	.79	1.4	6.1	.20	1
DEC											
13...	325	21	346	.64	.10	.54	.64	1.3	5.7	.13	0
21...	221	36	257	.48	.09	.62	.71	1.2	5.3	.09	0
JAN											
05...	334	19	353	.86	.13	.62	.75	1.6	7.1	.18	0
25...	435	29	464	.69	.31	.64	.95	1.6	7.3	.19	0
FEB											
10...	382	10	392	.74	.44	.38	.82	1.6	6.9	.18	1
15...	426	30	456	.77	.57	.63	1.2	2.0	8.7	.24	0
22...	439	11	450	.82	.61	.49	1.1	1.9	8.5	.26	0
MAR											
08...	557	79	636	.99	.60	.70	1.3	2.3	10	.29	3
22...	209	90	299	.72	.13	.75	.88	1.6	7.1	.13	1
APR											
04...	278	55	333	.55	.09	.49	.58	1.1	5.0	.15	0
18...	285	56	341	.28	.04	.72	.76	1.0	4.6	.08	0
MAY											
02...	341	38	379	.26	.03	.58	.61	.87	3.9	.17	3
17...	216	86	302	.35	.06	.85	.91	1.3	5.6	.14	0
31...	373	36	409	.88	.14	.86	1.0	1.9	8.3	.23	0
JUN											
13...	395	87	482	1.0	.09	.74	.83	1.8	8.1	.26	0
28...	403	79	482	.92	.76	.94	1.7	2.6	12	.56	0
JUL											
12...	480	41	521	.85	.01	.62	.63	1.5	6.6	.38	0
25...	428	70	498	.63	.17	.69	.86	1.5	6.6	.42	0
AUG											
07...	560	60	620	.69	.09	.79	.88	1.6	7.0	.68	0
21...	468	28	496	.44	.03	.67	.70	1.1	5.0	.41	2
SEP											
06...	515	63	578	.57	.04	.60	.64	1.2	5.4	.45	1
19...	464	93	557	1.1	.08	1.0	1.1	2.2	9.7	.60	1

04207100 TINKERS CREEK AT TWINSBURG, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	PHENOLS (UG/L)	OIL AND GREASE (MG/L)
OCT										
11...	30	5	1600	3	110	5	20	9.2	1	4
25...	10	4	1100	17	100	4	10	12	0	0
NOV										
08...	<10	4	2000	3	120	4	20	11	0	0
22...	<10	4	1400	12	70	3	20	15	1	0
DEC										
13...	<10	4	720	7	90	3	10	9.8	1	1
21...	20	8	1500	6	50	7	30	20	6	0
JAN										
05...	<10	14	1200	3	170	4	20	18	5	1
25...	<10	6	890	8	200	6	20	8.1	5	62
FEB										
10...	<10	5	890	0	220	5	20	4.1	2	6
15...	<10	5	900	4	280	6	20	8.2	0	0
22...	20	12	1100	0	300	2	20	7.8	0	0
MAR										
08...	<10	25	1400	32	290	8	40	8.4	0	0
22...	<10	9	29000	15	90	7	30	8.6	5	0
APR										
04...	<10	6	2000	18	70	0	20	10	58	3
18...	<10	4	920	1	120	6	10	5.7	0	0
MAY										
02...	20	3	780	51	130	5	20	7.8	3	1
17...	10	7	1800	3	80	7	30	7.6	0	0
31...	10	4	1700	3	280	6	20	8.5	22	0
JUN										
13...	<10	5	2500	0	290	8	10	9.3	1	0
28...	<10	3	1900	3	260	19	10	8.3	3	1
JUL										
12...	10	3	1600	4	260	5	10	13	0	0
25...	20	3	2200	2	240	8	20	4.2	2	1
AUG										
07...	10	3	2200	5	320	11	10	9.8	0	0
21...	10	4	770	6	210	6	60	6.8	4	0
SEP										
06...	<10	3	2400	1	270	9	20	6.4	0	1
19...	60	3	2600	5	310	6	20	6.2	0	0

04207200 TINKERS CREEK AT BEDFORD, OH

LOCATION.--Lat 41°23'04", long 81°31'39", in T.6 N., R.11 W., Cuyahoga County, Hydrologic Unit 04110002, on left bank at downstream side of bridge on State Highway 14 in Bedford, 5.5 mi (8.8 km) upstream from mouth.

DRAINAGE AREA.--83.9 mi^2 (217 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1962 to current year.

REVISED RECORDS.--WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 876.18 ft (267.060 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter periods, which are fair. Water-quality data collected at this site 1965 to 1977.

AVERAGE DISCHARGE.--15 years (1963-78), 125 ft^3/s (3.540 m^3/s), 20.24 in/yr (514 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,220 ft^3/s (204 m^3/s) July 20, 1969, gage height, 10.10 ft (3.078 m), from rating curve extended above 3,400 ft^3/s (96.3 m^3/s) on the basis of contracted-opening measurement of peak flow; minimum, 5.2 ft^3/s (0.15 m^3/s) Aug. 19, 1963.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft^3/s (42.5 m^3/s) and maximums (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 14	0830	*3080	87.2	*7.36	2.243	Apr. 19	2130	1770	50.1	6.29	1.917
Mar. 14	1330	2070	58.6	6.56	1.999						

Minimum discharge, 14 ft^3/s (0.40 m^3/s) Aug. 27, Sept. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	27	722	42	130	30	153	47	40	23	21	22
2	57	26	584	40	110	30	113	44	35	93	21	26
3	53	26	369	40	95	30	381	41	32	112	78	18
4	43	49	182	40	80	30	561	40	29	47	34	16
5	36	31	176	40	70	30	633	65	29	35	26	17
6	37	28	321	41	60	30	455	65	28	31	21	18
7	31	269	244	53	55	32	380	56	47	29	59	18
8	78	128	190	750	50	38	230	74	34	27	111	18
9	132	91	170	361	46	54	145	199	34	23	65	17
10	115	251	160	290	42	93	111	181	28	23	83	16
11	78	190	150	200	40	135	175	124	25	22	40	20
12	56	199	146	140	38	272	166	156	34	21	28	61
13	46	153	230	100	38	308	133	262	42	21	22	28
14	40	132	2340	75	36	1550	103	334	34	32	20	27
15	34	190	1620	65	36	1280	91	350	27	26	20	37
16	47	311	1450	60	34	1180	83	405	26	22	20	26
17	61	584	876	55	34	608	72	419	25	23	18	36
18	56	405	715	50	34	393	74	263	23	23	18	65
19	45	308	538	50	34	465	426	177	43	20	104	52
20	37	168	430	50	32	505	805	172	34	20	56	28
21	35	139	297	48	32	836	635	222	31	20	24	24
22	32	119	202	48	32	638	322	153	27	20	22	21
23	30	102	124	55	32	465	180	105	25	70	26	20
24	32	88	111	84	32	258	140	587	22	69	21	18
25	28	79	373	182	30	202	111	368	20	38	20	19
26	29	84	217	527	30	345	91	206	277	30	18	20
27	31	75	144	341	30	701	79	104	71	94	17	39
28	28	70	96	311	30	608	69	67	44	40	18	37
29	24	78	76	250	---	314	58	52	32	32	30	34
30	23	361	53	200	---	176	51	47	26	23	23	40
31	25	---	46	160	---	163	---	48	---	22	28	---
TOTAL	1460	4761	13352	4748	1342	11799	7026	5433	1224	1131	1112	838
MEAN	47.1	159	431	153	47.9	381	234	175	40.8	36.5	35.9	27.9
MAX	132	584	2340	750	130	1550	805	587	277	112	111	65
MIN	23	26	46	40	30	30	51	40	20	20	17	16
CFSM	.56	1.90	5.14	1.82	.57	4.54	2.79	2.09	.49	.44	.43	.33
IN.	.65	2.11	5.92	2.11	.60	5.23	3.12	2.41	.54	.50	.49	.37

CAL YR 1977 TOTAL 55969 MEAN 153 MAX 2340 MIN 15 CFSM 1.82 IN 24.82
WTR YR 1978 TOTAL 54226 MEAN 149 MAX 2340 MIN 16 CFSM 1.78 IN 24.04

04207200 TINKERS CREEK AT BEDFORD, OH--Continued

SEDIMENT ANALYSES

PERIOD OF RECORD.--March to June 1972, January 1974 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,300 mg/L Feb. 16, 1976; minimum daily mean, 1 mg/L on many days during July, August, 1975.
SEDIMENT LOADS: Maximum daily, 9,800 tons (8,890 tonnes) Feb. 16, 1976; minimum daily, 0.05 ton (0.05 tonne) Aug. 1-3, 1975.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 632 mg/L June 26; minimum daily mean, 2 mg/L July 17.
SEDIMENT LOADS: Maximum daily, 3,570 tons (3,240 tonnes) Dec. 14; minimum daily, 0.12 ton (0.11 tonne) July 17.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
DEC 14...	0900	3080	961	7990	31	39	48
APR 03...	0920	816	607	1340	37	44	55

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM
DEC 14...	63	75	82	89	97	100
APR 03...	69	81	90	94	100	--

04207200 TINKERS CREEK AT BEDFORD, OH--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	42	6.9	8	.58	218	535	21	2.4	15	5.3	27	2.2
2	19	2.9	9	.63	123	194	20	2.2	15	4.5	21	1.7
3	20	2.9	32	2.2	100	100	20	2.2	15	3.8	21	1.7
4	18	2.1	39	5.2	52	26	20	2.2	15	3.2	21	1.7
5	17	1.7	15	1.3	33	16	20	2.2	15	2.8	23	1.9
6	19	1.9	3	.23	24	21	18	2.0	15	2.4	24	1.9
7	20	1.7	348	467	22	14	16	2.3	15	2.2	26	2.2
8	52	11	43	15	21	11	204	413	15	2.0	29	3.0
9	160	57	24	5.9	20	9.2	10	9.7	15	1.9	37	5.4
10	123	38	189	192	20	8.6	10	7.8	15	1.7	57	14
11	63	13	95	49	20	8.1	10	5.4	15	1.6	27	9.8
12	39	5.9	43	23	18	7.1	10	3.8	15	1.5	16	12
13	29	3.6	26	11	51	50	10	2.7	15	1.5	80	95
14	18	1.9	25	8.9	538	3570	10	2.0	15	1.5	570	2640
15	11	1.0	50	26	184	805	10	1.8	15	1.5	267	923
16	8	1.0	68	57	109	427	10	1.6	15	1.4	154	491
17	12	2.0	175	276	75	177	10	1.5	15	1.4	78	128
18	18	2.7	96	105	61	118	10	1.4	15	1.4	49	52
19	18	2.2	53	44	42	61	10	1.4	15	1.4	44	55
20	16	1.6	36	16	57	66	10	1.4	15	1.3	90	123
21	19	1.8	38	14	25	20	10	1.3	15	1.3	261	706
22	13	1.1	31	10	25	14	10	1.3	15	1.3	124	214
23	8	.65	15	4.1	24	8.0	10	1.5	15	1.3	78	98
24	12	1.0	9	2.1	34	10	10	2.3	15	1.3	44	31
25	17	1.3	13	2.8	245	398	85	42	15	1.2	36	20
26	9	.70	15	3.4	20	12	240	341	15	1.2	77	72
27	13	1.1	17	3.4	20	7.8	40	37	19	1.5	195	484
28	16	1.2	18	3.4	20	5.2	16	13	36	2.9	100	164
29	12	.78	18	3.8	21	4.3	15	10	---	---	55	47
30	9	.56	173	361	22	3.1	15	8.1	---	---	42	20
31	9	.61	---	---	22	2.7	16	6.9	---	---	52	23
TOTAL	---	171.80	---	1713.94	---	6709.1	---	933.4	---	56.3	---	6443.5

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	50	21	4	.51	13	1.4	22	1.4	15	.85	7	.42
2	42	13	7	.83	15	1.4	33	8.3	15	.85	6	.42
3	240	340	5	.55	15	1.3	36	11	48	10	6	.29
4	285	720	8	.86	15	1.2	25	3.2	25	2.3	7	.38
5	375	869	7	1.2	14	1.1	10	.94	19	1.3	9	.41
6	94	115	4	.70	15	1.1	5	.42	17	.96	5	.24
7	77	79	4	.60	25	3.2	5	.39	61	9.7	9	.44
8	47	29	50	10	13	1.2	6	.44	172	52	14	.68
9	33	13	188	101	16	1.5	6	.37	28	4.9	13	.60
10	28	8.4	52	25	18	1.4	6	.37	18	4.0	8	.35
11	78	37	20	6.7	16	1.1	9	.53	16	1.7	3	.16
12	43	19	13	5.5	11	1.0	5	.28	13	.98	107	33
13	14	5.0	66	47	9	1.0	5	.28	12	.71	13	.98
14	12	3.3	70	63	7	.64	5	.43	9	.49	60	4.4
15	12	2.9	65	61	8	.58	3	.21	5	.27	95	9.5
16	11	2.5	75	82	13	.91	3	.18	8	.43	93	6.5
17	10	1.9	72	81	13	.88	2	.12	7	.34	112	11
18	10	2.0	35	25	8	.50	3	.19	5	.24	107	19
19	325	374	28	13	8	.93	10	.54	332	93	98	14
20	342	743	29	13	7	.64	14	.76	180	27	92	7.0
21	79	135	28	17	12	1.0	11	.59	9	.58	105	6.8
22	51	44	24	9.9	9	.66	10	.54	6	.36	104	5.9
23	33	16	17	4.8	8	.54	245	46	7	.49	101	5.5
24	17	6.4	289	677	8	.48	100	19	6	.34	99	4.8
25	12	3.6	94	93	8	.43	12	1.2	5	.27	98	5.0
26	12	2.9	56	31	632	772	4	.32	5	.24	78	4.2
27	9	1.9	34	9.5	37	7.1	311	251	5	.23	93	9.8
28	12	2.2	23	4.2	10	1.2	150	16	5	.24	83	8.3
29	11	1.7	15	2.1	8	.69	27	2.3	5	.41	70	6.4
30	8	1.1	12	1.5	13	.91	18	1.1	5	.31	85	9.2
31	---	---	13	1.7	---	---	15	.89	7	.53	---	---
TOTAL	---	3612.8	---	1390.15	---	807.99	---	369.29	---	216.02	---	175.59

TOTAL LOAD FOR YEAR: 22599.88 TONS.

04207300 TINKERS CREEK NEAR INDEPENDENCE, OH

LOCATION.--Lat 41°21'54", long 81°36'32", Cuyahoga County, Hydrologic Unit 04110002, at bridge on Canal Road, 300 ft (90 m) upstream from Cuyahoga River, and 2.7 mi (4.3 km) southeast of Independence.

DRAINAGE AREA.--96.0 mi² (248.6 km²).

PERIOD OF RECORD.--July 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (JTU)	TRANS-PAR-ENCY (SECCHI DISK) (IN)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)
OCT											
11...	1330	87	765	8.1	13.0	30	15	9.4	89	30	1400
25...	1500	39	830	8.4	14.0	4	48	13.7	130	15	87
NOV											
08...	1400	169	625	8.2	16.0	15	12	8.7	87	40	3500
22...	1200	142	600	8.1	6.5	20	15	11.8	96	25	770
DEC											
13...	1230	181	970	8.0	1.0	30	14	12.8	90	31	2300
21...	1200	462	460	8.1	2.5	25	10	12.3	90	24	4400
JAN											
06...	1030	70	1130	8.1	1.0	15	22	12.6	89	41	6800
25...	1230	165	1830	7.9	1.0	30	12	12.5	88	43	5500
FEB											
10...	1230	64	1170	7.7	.0	5	24	12.5	86	33	670
15...	1230	58	1580	7.9	.0	10	26	11.2	77	37	730
22...	1330	52	1150	8.0	1.0	7	--	11.0	77	35	420
MAR											
08...	1330	64	1440	8.1	.5	20	25	11.5	80	75	7000
22...	1145	790	595	7.8	5.0	60	8.0	12.4	97	25	1800
APR											
04...	1200	450	700	8.0	7.5	50	12	10.8	90	30	10000
18...	1300	81	775	8.4	8.5	10	27	13.8	120	35	160
MAY											
02...	1230	56	810	8.7	12.0	4	36	15.4	140	30	67
17...	1530	540	460	8.1	16.0	40	12	10.1	100	35	1700
31...	1330	63	800	8.5	23.5	5	48	12.0	140	35	8600
JUN											
13...	1800	39	915	8.2	16.5	3	32	10.6	110	35	2900
28...	1030	60	900	8.1	22.5	10	38	8.0	91	25	400
JUL											
12...	1430	24	980	8.5	22.0	3	4.0	13.2	150	45	770
25...	1100	45	710	8.0	22.5	10	3.0	8.8	100	33	4200
AUG											
07...	1430	28	900	8.7	23.0	2	60	12.8	150	32	220
21...	1300	26	840	7.8	22.0	5	22	8.8	100	14	2200
SEP											
06...	1700	20	970	8.7	25.5	2	48	12.2	150	33	140
19...	1430	56	780	8.0	25.5	25	13	8.5	100	29	8000

04207300 TINKERS CREEK NEAR INDEPENDENCE, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	PHENOLS (UG/L)	OIL AND GREASE (MG/L)
OCT										
11...	20	13	1800	10	110	13	60	10	3	1
25...	10	9	380	22	40	15	40	10	2	0
NOV										
08...	10	9	1500	28	90	9	60	9.8	0	0
22...	<10	9	1400	15	90	8	30	12	0	0
DEC										
13...	20	19	2500	75	170	13	80	11	12	1
21...	20	13	1800	37	90	11	40	15	9	0
JAN										
06...	10	22	1300	62	200	20	60	13	180	2
25...	10	23	2200	90	210	23	80	5.4	44	4
FEB										
10...	20	16	450	2	180	27	40	5.6	1	0
15...	10	21	460	12	230	21	50	10	6	0
22...	10	24	680	17	270	26	80	12	2	2
MAR										
08...	20	28	2400	170	300	28	150	16	10	4
22...	<10	14	4700	29	130	14	50	6.3	4	1
APR										
04...	<10	21	3500	21	120	8	40	14	79	3
18...	<10	54	730	10	130	17	30	11	0	1
MAY										
02...	220	24	550	11	100	25	40	6.4	2	2
17...	10	17	5200	87	160	13	50	7.9	0	0
31...	10	13	890	7	80	14	30	7.0	1	0
JUN										
13...	<10	10	440	4	110	20	20	12	2	0
28...	20	7	670	10	110	21	50	7.2	2	1
JUL										
12...	10	16	560	13	60	19	60	9.2	0	1
25...	20	5	520	7	100	12	40	3.8	4	1
AUG										
07...	20	6	240	4	60	15	20	6.5	0	0
21...	30	9	350	7	40	11	50	7.5	2	0
SEP										
06...	20	11	230	1	30	20	50	8.6	0	0
19...	10	8	1000	11	80	19	40	6.6	1	0

04207300 TINKERS CREEK NEAR INDEPENDENCE, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	CALCIUM TOTAL RECOVERABLE (MG/L AS CA)	MAGNESIUM, TOTAL RECOVERABLE (MG/L AS MG)	SODIUM, TOTAL RECOVERABLE (MG/L AS NA)	POTASSIUM, TOTAL RECOVERABLE (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	ALKALINITY (MG/L AS CACO3)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT											
11...	800	--	--	--	--	--	--	--	--	--	--
25...	80	--	--	--	--	--	--	--	--	--	--
NOV											
08...	1200	--	--	--	--	--	--	--	--	--	--
22...	140	52	13	36	3.7	134	0	110	1.7	64	88
DEC											
13...	3400	--	--	--	--	--	--	--	--	--	--
21...	6000	--	--	--	--	--	--	--	--	--	--
JAN											
06...	2700	--	--	--	--	--	--	--	--	--	--
25...	2600	--	--	--	--	--	--	--	--	--	--
FEB											
10...	180	--	--	--	--	--	--	--	--	--	--
15...	560	--	--	--	--	--	--	--	--	--	--
22...	190	67	18	110	4.7	200	0	164	3.2	86	190
MAR											
08...	3400	--	--	--	--	--	--	--	--	--	--
22...	4400	--	--	--	--	--	--	--	--	--	--
APR											
04...	1100	--	--	--	--	--	--	--	--	--	--
18...	90	--	--	--	--	--	--	--	--	--	--
MAY											
02...	95	56	17	60	4.1	130	16	133	.5	72	130
17...	1000	--	--	--	--	--	--	--	--	--	--
31...	190	--	--	--	--	--	--	--	--	--	--
JUN											
13...	440	--	--	--	--	--	--	--	--	--	--
28...	280	--	--	--	--	--	--	--	--	--	--
JUL											
12...	K35	--	--	--	--	--	--	--	--	--	--
25...	750	--	--	--	--	--	--	--	--	--	--
AUG											
07...	87	64	19	--	--	166	14	159	.6	74	130
21...	45	--	--	--	--	--	--	--	--	--	--
SEP											
06...	33	--	--	--	--	--	--	--	--	--	--
19...	750	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)
OCT											
11...	525	45	570	2.0	.30	.58	.88	2.9	13	.80	0
25...	582	37	619	4.3	.25	1.1	1.3	5.6	25	.87	0
NOV											
08...	390	81	471	1.2	.06	1.0	1.1	2.3	10	.49	5
22...	432	20	452	1.3	.27	.73	1.0	2.3	10	.36	1
DEC											
13...	600	86	686	1.4	.66	1.1	1.8	3.2	14	.54	0
21...	291	46	337	.72	.28	.59	.87	1.6	7.0	.17	0
JAN											
06...	663	75	738	1.6	1.6	1.6	3.2	4.8	21	1.1	4
25...	993	77	1070	1.3	1.1	.10	1.2	2.5	11	.77	1
FEB											
10...	719	28	747	1.2	1.8	1.2	3.0	4.2	19	.59	1
15...	945	44	989	1.5	2.5	1.5	4.0	5.5	24	.77	0
22...	668	40	708	1.7	3.3	1.4	4.7	6.4	28	1.1	1
MAR											
08...	862	68	930	1.2	3.3	3.6	6.9	8.1	36	1.2	5
22...	264	192	456	.92	.24	.96	1.2	2.1	9.4	.20	0
APR											
04...	389	79	468	.85	.55	.65	1.2	2.1	9.1	.44	1
18...	452	43	495	.66	.81	1.4	2.2	2.9	13	.44	1
MAY											
02...	511	39	550	2.0	1.3	1.4	2.7	4.7	21	.31	0
17...	286	120	406	.71	.22	.98	1.2	1.9	8.5	.40	1
31...	519	40	559	2.1	.32	1.1	1.4	3.5	16	1.1	0
JUN											
13...	568	75	643	2.3	.26	1.0	1.3	3.6	16	1.2	0
28...	545	55	600	2.0	.31	.99	1.3	3.3	15	.79	1
JUL											
12...	524	45	669	3.7	.26	1.4	1.7	5.4	24	1.4	1
25...	419	41	460	1.9	.05	.00	.05	2.0	8.6	1.2	0
AUG											
07...	471	78	549	4.0	.08	.89	.97	5.0	22	1.2	0
21...	513	34	547	.74	.50	.80	1.3	2.0	9.0	.98	2
SEP											
06...	570	60	630	6.5	.10	1.3	1.4	7.9	35	1.5	2
19...	474	41	515	2.1	.17	1.2	1.4	3.5	16	.85	1

04207500 OHIO CANAL AT INDEPENDENCE, OH

LOCATION.--Lat 41°23'25", long 81°37'30", in T.6 N., R.12 W., Cuyahoga County, Hydrologic Unit 04110002, on right bank at upstream side of dam, 0.3 mi (0.5 km) upstream from Rockside Road and 0.8 mi (1.3 km) northeast of Independence.

PERIOD OF RECORD.--September 1921 to May 1923, August 1927 to December 1935, October 1940 to current year.

GAGE.--Water-stage recorder and concrete dam. Datum of gage is 605.31 ft (184.488 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 9, 1946, nonrecording gage, or water-stage recorder at site 0.4 mi (0.6 km) downstream at various datums. Dec. 10, 1946, to Nov. 3, 1950, nonrecording gage at present site and datum.

REMARKS.--Records good, except those for period of no gage-height record, which is poor. Water is diverted from Cuyahoga River into canal at headgates at Brecksville, 6 mi (10 km) upstream. Water-quality data collected at this site 1965 to 1977.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 277 ft³/s (7.84 m³/s) Jan. 22, 1959; no flow June 4, 1947, July 2-7, 1950, July 16 to Aug. 19, 1959, Oct. 27 to Nov. 6, 1975.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	40	60	52	63	65	63	72	65	37	37	56
2	49	42	55	52	64	64	61	70	64	39	37	56
3	50	46	55	51	65	65	77	69	62	43	38	55
4	49	50	50	49	64	65	78	68	63	39	39	55
5	49	50	50	49	63	64	100	72	61	39	35	55
6	49	50	50	50	62	65	91	71	58	38	48	55
7	50	50	50	50	69	66	92	70	59	36	45	55
8	52	50	50	78	61	66	88	69	57	35	51	57
9	53	50	50	66	61	67	86	83	53	34	52	57
10	52	55	50	54	59	70	85	83	53	32	21	57
11	49	55	50	53	59	73	86	83	54	32	53	57
12	49	50	50	54	59	76	85	84	53	31	60	58
13	49	50	50	54	60	81	82	92	53	31	61	46
14	49	50	70	55	60	92	81	96	50	34	63	57
15	50	50	100	53	59	79	80	92	49	34	63	58
16	50	55	80	51	60	84	80	86	48	32	62	57
17	51	65	75	51	62	79	80	77	47	32	63	58
18	50	60	70	51	62	76	81	75	44	32	64	58
19	50	55	70	50	62	79	89	70	46	32	66	55
20	49	55	68	50	61	82	94	67	43	32	55	55
21	40	50	64	48	61	85	85	70	40	32	54	55
22	38	50	61	48	61	70	80	64	39	32	54	56
23	36	50	60	49	60	70	77	62	37	33	54	56
24	40	50	58	49	62	69	77	82	35	35	54	56
25	44	50	69	53	67	70	76	57	34	33	54	55
26	46	50	57	73	64	76	76	56	37	33	54	55
27	46	50	54	48	64	86	75	77	33	35	55	55
28	46	50	52	34	64	74	74	71	31	37	55	55
29	44	50	53	63	---	68	73	69	31	37	55	55
30	42	70	53	61	---	65	72	67	36	37	55	56
31	40	---	52	64	---	66	---	67	---	37	56	---
TOTAL	1460	1548	1836	1663	1738	2257	2424	2291	1435	1075	1613	1671
MEAN	47.1	51.6	59.2	53.6	62.1	72.8	80.8	73.9	47.8	34.7	52.0	55.7
MAX	53	70	100	78	69	92	100	96	65	43	66	58
MIN	36	40	50	34	59	64	61	56	31	31	21	46

CAL YR 1977 TOTAL 20695.5 MEAN 56.7 MAX 100 MIN 4.0
WTR YR 1978 TOTAL 21011.0 MEAN 57.6 MAX 100 MIN 21

Note.--No gage-height record Oct. 21 to Dec. 20.

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OH
(National stream quality accounting network station)

LOCATION.--Lat 41°23'43", long 81°37'48, in T.6 N., R.12 W., Cuyahoga County, Hydrologic Unit 04110002, on left bank 240 ft (73 m) downstream from bridge on Old Rockside Road, 0.8 mi (1.3 km) northeast of Independence, and 3.0 mi (4.8 km) downstream from Tinkers Creek.

DRAINAGE AREA.--707 mi² (1,831 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1903 to December 1905 (fragmentary), January to July 1906 (gage heights and discharge measurements only), September 1921 to May 1923, September 1927 to December 1935, March 1940 to current year.

REVISED RECORDS.--WSP 1307: 1922-23(M), 1928-30(M), 1933(M), 1940(M), 1947(M), 1950(M). WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 583.57 ft (177.872 m) National Geodetic Vertical Datum of 1929. Sept. 21, 1903 to July 21, 1906, nonrecording gage at bridge 240 ft (73 m) upstream at present datum. Sept. 28, 1921 to May 30, 1923, nonrecording gage at bridge 240 ft (73 m) upstream at datum 2.42 ft (0.738 m) higher. Sept. 5, to Oct. 8, 1927, nonrecording gage, and Oct. 9, 1927, to Dec. 31, 1935, Mar. 5, 1940, to June 19, 1969, water-stage recorder, at site 100 ft (30 m) upstream at present datum.

REMARKS.--Records good except those for July and August, which are poor. Natural flow of stream affected by diversion, storage reservoirs and power plants. Some diversion from the Tuscarawas drainage into this basin at Portage Lakes (see REMARKS for station 03116000). Water diverted into Ohio Canal at Brecksville, 6 mi (10 km) upstream from station, bypasses station. These records do not include flow in canal except above about 15,000 ft³/s (425 m³/s (425 m³/s), when channels merge; record of diversion published as Ohio Canal at Independence (see station 04207500).

AVERAGE DISCHARGE.--47 years (1921-22, 1927-35, 1940-78), 796 ft³/s (22.54 m³/s), not including flow in Ohio Canal.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,800 ft³/s (702 m³/s) Jan. 22, 1959, gage height, 22.41 ft (6.381 m), from rating curve extended above 17,000 ft³/s (481 m³/s) on basis of contracted-opening measurement of peak flow; minimum daily, 21 ft³/s (0.59 m³/s) Aug. 28, 1933; minimum combined daily discharge of river and canal, 55 ft³/s (1.56 m³/s) Aug. 28, 1933.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,900 ft³/s (365 m³/s) Dec. 14, gage height, 20.02 ft (6.102 m); minimum daily, 185 ft³/s (5.24 m³/s) Sept. 4, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	456	276	3970	823	1080	430	1860	621	629	414	290	270
2	520	335	2320	738	1040	430	1470	525	561	545	300	214
3	520	388	1760	609	965	430	2500	429	525	1070	500	195
4	493	460	1530	537	865	430	2570	414	509	647	350	185
5	507	452	1600	533	823	430	3630	585	477	593	300	191
6	502	404	2590	565	764	430	2600	557	465	553	290	221
7	476	1490	1820	589	728	430	2720	505	485	501	350	218
8	682	849	1410	3490	688	450	2200	493	537	469	400	211
9	1040	637	1320	2710	629	509	1840	1360	473	445	500	204
10	768	1170	1180	1550	593	697	1580	1010	421	411	1200	195
11	660	1080	1100	1290	569	925	1620	865	386	383	800	185
12	588	950	1080	1280	565	1520	1490	990	386	379	600	364
13	543	965	1300	1370	573	1750	1230	1800	577	400	550	440
14	516	894	9400	1350	577	7090	1050	2550	429	2200	500	255
15	498	1010	10200	1170	537	7800	935	2010	393	800	400	318
16	511	1690	6210	1020	529	5240	841	2640	404	440	300	245
17	601	3270	5060	925	533	3950	764	2220	379	420	290	241
18	525	2190	5440	865	513	3270	791	1810	300	588	280	307
19	480	1750	5040	769	501	3160	1360	1520	895	637	280	283
20	464	1530	4180	715	485	3420	3680	1350	580	633	300	255
21	448	1570	3450	679	493	4740	2470	1800	470	561	280	269
22	356	1410	2740	670	477	4260	1750	1260	420	450	260	304
23	279	1190	2160	609	450	3490	1370	1050	380	500	240	286
24	258	1010	1850	629	450	3100	1240	3560	429	570	250	262
25	255	903	3420	970	440	3000	1110	1940	433	460	260	235
26	314	880	1950	3140	440	3450	970	1380	1100	430	240	208
27	400	772	1370	2100	430	5210	850	1060	701	450	220	204
28	396	727	1140	1700	430	3860	755	940	569	480	230	218
29	332	669	1080	1430	---	2850	697	823	501	390	240	208
30	265	1380	980	1320	---	2360	647	764	453	360	270	201
31	258	---	905	1150	---	2150	---	800	---	320	310	---
TOTAL	14911	32301	89555	37295	17167	81261	48590	39631	15267	17499	11580	7392
MEAN	481	1077	2889	1203	613	2621	1620	1278	509	564	374	246
MAX	1040	3270	10200	3490	1080	7800	3680	3560	1100	2200	1200	440
MIN	255	276	905	533	430	430	647	414	300	320	220	185

CAL YR 1977 TOTAL 382637 MEAN 1048 MAX 10200 MIN 156
WTR YR 1978 TOTAL 412449 MEAN 1130 MAX 10200 MIN 185

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1948 to September 1949, October 1952 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1965 to current year.
pH: February 1973 to current year.
WATER TEMPERATURES: October 1948 to September 1949, October 1952 to current year.
DISSOLVED OXYGEN: July 1965 to current year.
SUSPENDED SEDIMENT DISCHARGE: Water years 1950-74, December 1976 to current year.

INSTRUMENTATION.--Alcohol-actuated thermograph October 1956 to June 1965, water-quality monitor since July 1965.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 3,000 micromhos Feb. 12, 1977; minimum, 149 micromhos Nov. 23, 1974.
pH: Maximum, 8.9 units Aug. 27, 28, 1976; minimum, 5.9 units Jan. 26, 1976.
WATER TEMPERATURES: Maximum, 31.0°C Aug. 18, 1949; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 14.5 mg/L Feb. 16, 1973; minimum, 0.0 mg/L Oct. 23, 1965, Feb. 10-12, June 23, July 26, 1966.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 4,800 mg/L Aug. 21, 1960; minimum daily mean, 1 mg/L Sept. 4, 10, 1955.
SEDIMENT LOADS: Maximum daily, 51,400 tons (46,600 tonnes) Mar. 5, 1964; minimum daily, 0.25 ton (0.23 tonnes) Sept. 4, 1955.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,790 micromhos Jan. 26; minimum, 417 micromhos May 24.
pH: Maximum recorded, 8.4 units July 20, Aug. 29; minimum recorded, 6.9 units Jan. 22, Sept. 14, 15, 17, 18.
WATER TEMPERATURES: Maximum, 29.5°C July 21, 22; minimum, 0.0°C Dec. 26, Jan. 10, 11, 26, Feb. 7.
DISSOLVED OXYGEN: Maximum recorded, 13.4 mg/L Mar. 15, 16, 18; minimum recorded, 0.7 mg/L July 14.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,640 mg/L Dec. 14; minimum daily mean, 3 mg/L Oct. 31, Sept. 28.
SEDIMENT LOADS: Maximum daily, 42,900 tons (38,900 tonnes) Dec. 14; minimum daily, 1.8 tons (1.6 tonnes) Sept. 28.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (JTU)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT												
12...	1000	1070	7.6	12.5	8	--	8.6	80	--	--	1400	200
NOV												
10...	1000	730	7.7	16.0	60	--	7.0	70	--	--	4200	1100
DEC												
13...	1600	840	7.8	3.0	15	--	11.2	83	--	--	10000	7600
JAN												
04...	1300	830	7.9	1.0	10	--	13.2	93	--	--	3400	2600
FEB												
16...	1000	1290	8.0	2.0	8	--	12.7	92	--	--	11000	4700
MAR												
16...	1330	480	7.7	3.0	150	--	13.3	100	--	--	11000	2600
APR												
05...	0900	510	7.7	10.5	95	--	11.2	100	50	--	80000	10000
MAY												
08...	1215	845	7.7	15.0	5	--	8.8	86	20	--	250	130
JUN												
07...	1300	930	7.6	21.0	8	--	6.0	65	30	--	1700	1000
JUL												
05...	1230	960	7.8	22.5	--	4.0	6.0	68	22	--	2700	110
AUG												
09...	0830	925	7.6	24.5	--	20	7.9	94	--	42	6200	2200
SEP												
20...	0900	1480	7.3	25.0	--	3.0	5.3	63	--	35	2400	200

STREAMS TRIBUTARY TO LAKE ERIE

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	ALKA-LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT												
12...	220	100	66	14	110	5.1	150	0	120	6.0	78	170
NOV												
10...	210	95	61	14	56	5.8	140	0	110	4.5	88	77
DEC												
13...	200	100	58	13	80	4.0	120	0	98	3.0	81	130
JAN												
04...	200	96	58	14	75	4.2	130	0	110	2.6	85	120
FEB												
16...	230	110	68	15	160	4.6	150	0	120	2.4	100	250
MAR												
16...	130	61	37	8.4	37	3.0	81	0	66	2.6	50	69
APR												
05...	110	38	28	9.0	37	2.6	84	0	69	2.7	58	65
MAY												
08...	260	130	75	17	65	4.4	160	0	130	5.1	110	100
JUN												
07...	240	110	70	17	85	5.0	160	0	130	6.4	110	130
JUL												
05...	240	100	70	16	90	4.6	--	--	140	--	89	150
AUG												
09...	240	98	69	16	75	5.3	--	--	140	--	90	140
SEP												
20...	280	140	79	19	170	8.4	--	--	140	--	53	280

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M
OCT												
12...	.3	8.5	573	526	--	--	--	--	.38	--	--	--
NOV												
10...	.3	7.6	414	379	--	--	--	--	.44	15	2800	--
DEC												
13...	.3	11	449	436	--	--	--	--	.31	12	--	--
JAN												
04...	.2	8.2	457	429	--	--	--	--	.34	--	--	--
FEB												
16...	.2	9.6	711	681	1.4	3.7	4.8	21	.34	10	--	--
MAR												
16...	.1	6.3	272	251	1.3	1.7	3.0	13	.31	11	240	--
APR												
05...	.1	5.9	302	247	1.4	1.9	3.0	13	.27	--	--	--
MAY												
08...	.3	4.2	488	455	1.0	2.5	3.8	17	.27	--	13000	--
JUN												
07...	.3	7.0	569	503	.84	1.5	4.1	18	.39	9.1	1300	5.91
JUL												
05...	.3	8.2	589	512	.72	1.1	3.4	15	.28	--	--	--
AUG												
09...	.3	9.2	538	489	.85	1.1	3.3	15	.47	6.9	--	--
SEP												
20...	.5	10	940	704	3.5	4.1	7.4	33	.80	6.8	--	--

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

ANALYSES OF MINOR ELEMENTS

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)
OCT 12...	1000	2	2	0	0	10	0	2	0	9	5	1200
JAN 04...	1300	2	1	0	0	20	1	0	0	12	7	1400
MAY 08...	1215	2	1	0	0	20	2	0	0	9	8	690
JUL 05...	1230	2	1	3	3	10	0	0	0	9	9	660

DATE	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 12...	50	5	3	120	70	<.5	<.5	0	0	30	20
JAN 04...	60	4	2	170	160	<.5	<.5	0	0	20	20
MAY 08...	50	20	20	160	160	<.5	<.5	0	0	30	20
JUL 05...	20	5	2	120	100	.5	.5	0	0	20	20

ANALYSES OF PESTICIDES

DATE	TIME	ALDRIN, TOTAL (UG/L)	ATRA-ZINE, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)
NOV 30...	1030	ND	ND	.0	ND	ND	ND	ND	ND	ND	ND	ND
FEB 16...	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MAY 08...	1215	ND	ND	ND	ND	ND	ND	--	ND	ND	--	ND
AUG 09...	0830	ND	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	SIMA-ZINE TOTAL COUL-SON COND. (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
NOV 30...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 16...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MAY 08...	ND	ND	--	--	--	--	ND	ND	--	--	--	--
AUG 09...	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OH--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
DEC 14...	0730	8290	2100	47000	27	36	49
MAR 27...	0715	5920	941	15000	28	39	53
MAY 24...	0735	4380	1940	22900	29	41	53

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM
DEC 14...	64	77	88	92	98	100
MAR 27...	70	83	92	96	100	--
MAY 24...	69	82	92	96	100	--

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)
OCT 12...	1000	583	12.5	20	31
NOV 10...	1000	777	16.0	72	151
DEC 13...	1600	1230	3.0	50	166
JAN 04...	1300	565	1.0	34	52
FEB 16...	1000	533	2.0	16	23
MAR 16...	1330	4930	3.0	414	5510
APR 05...	0900	3810	10.5	316	3250
MAY 08...	1215	469	15.0	12	15
JUN 07...	1300	473	21.0	46	59
JUL 05...	1230	593	22.5	12	19
AUG 09...	0830	500	24.5	48	65
SEP 20...	0900	266	25.0	14	10

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1080	846	1500	1340	840	582	768	630	909	870	1180	1100
2	855	729	1760	1400	630	579	786	711	930	876	1230	1090
3	987	732	1640	1250	663	582	915	780	1030	894	1330	1180
4	1010	822	1290	1100	747	660	933	828	1030	936	1470	1260
5	924	816	1200	1010	870	615	1030	927	1030	927	1460	1350
6	858	777	1280	1100	861	741	1130	987	1020	951	1400	1250
7	939	867	1200	546	750	723	1250	1100	1010	951	1340	1250
8	912	831	667	609	723	684	1180	600	1090	912	1350	1160
9	930	699	723	684	705	681	708	630	1020	900	1420	1240
10	813	666	741	636	783	702	717	687	1190	996	1640	1350
11	900	771	654	609	738	672	696	654	1250	1100	1550	1400
12	1160	885	1030	657	690	672	741	657	1240	1030	1390	1210
13	1090	957	1010	894	1320	690	783	699	1190	1080	1200	1010
14	1020	873	924	843	1320	495	828	717	1170	1020	984	495
15	939	807	870	771	501	483	921	789	1370	1130	525	498
16	975	888	762	633	516	480	840	771	1350	1220	534	480
17	1010	900	630	540	516	471	867	771	1220	1140	537	513
18	946	849	603	570	477	438	894	762	1280	1130	609	537
19	1070	906	609	576	444	429	870	828	1350	1200	627	525
20	1010	867	636	609	507	444	948	864	1240	1090	534	510
21	984	894	771	627	495	471	1010	903	1080	957	543	519
22	1050	891	681	636	507	477	885	840	1020	909	534	480
23	1250	1060	705	669	555	513	1080	825	1050	978	504	477
24	1340	1210	783	696	627	552	1100	993	1070	1010	507	453
25	1410	1270	813	714	666	516	1700	1030	1070	990	555	465
26	1470	1310	954	774	525	504	1790	1210	1090	1030	579	522
27	1450	1100	1090	822	576	528	---	---	1090	1030	558	477
28	1260	1090	1070	975	648	585	---	---	1110	1030	513	471
29	1220	1100	1200	987	612	591	---	---	---	---	522	489
30	1370	1180	1200	897	630	600	867	825	---	---	516	456
31	1440	1220	---	---	663	603	903	855	---	---	528	477
MONTH	1470	666	1760	540	1320	429	1790	600	1370	870	1640	453

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	555	513	786	732	996	693	1210	1170	1190	1020	1160	1030
2	588	570	966	792	954	819	1200	957	1200	1110	1030	1020
3	663	567	864	828	1010	879	1030	798	1210	999	1230	1030
4	570	543	864	840	990	909	984	783	1030	882	1250	1140
5	537	510	948	843	960	900	1030	915	1070	948	1130	1020
6	555	519	921	834	978	879	1070	924	1160	1050	1050	996
7	549	507	879	825	978	912	1030	915	1240	909	1300	999
8	519	492	858	831	1070	849	930	864	879	735	1520	1240
9	522	504	834	630	855	804	1050	906	1070	849	1220	1210
10	609	528	708	618	999	846	1100	1020	987	639	---	---
11	654	612	747	711	1050	957	1190	1120	738	672	---	---
12	642	603	753	702	1050	966	1300	1120	831	690	1490	1010
13	675	633	789	612	1050	750	1340	1210	1090	843	1400	933
14	672	651	624	531	909	735	1550	480	966	861	1130	1010
15	705	666	708	579	1220	915	729	579	1090	927	1590	1150
16	702	669	645	531	1240	1140	897	732	1340	1020	1570	1060
17	723	678	588	546	1220	1040	945	867	1390	1080	1160	1040
18	732	690	576	552	1180	1070	1100	948	1360	1220	1200	1010
19	786	522	594	567	1200	603	1050	939	1250	738	1300	1080
20	621	513	609	588	912	624	954	885	1040	705	1510	1320
21	567	540	702	582	1080	897	1030	924	1070	915	1580	1220
22	582	567	651	603	1100	1020	1010	810	1090	960	1290	1060
23	603	585	657	621	1070	978	981	729	1200	1010	1080	978
24	627	597	663	417	1110	1010	1070	708	1150	1010	1220	1030
25	672	615	549	510	1080	999	984	771	1180	1110	1350	1240
26	798	684	621	556	1040	618	1220	987	1200	1100	1460	1270
27	738	696	678	633	960	837	1180	801	1330	1100	1390	1210
28	807	729	696	633	1040	876	1190	822	1200	1060	1300	1210
29	834	738	657	633	1130	1020	924	816	1100	1030	1280	1230
30	768	741	768	636	1170	1060	912	840	1240	1040	1400	1200
31	---	---	759	693	---	---	1040	855	1190	1070	---	---
MONTH	834	492	966	417	1240	603	1550	480	1390	639	1590	933
YEAR	1790	417										

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.2	7.9	---	---	7.8	7.4	7.7	7.6	---	---	7.9	7.7
2	8.1	7.9	---	---	7.8	7.5	7.8	7.7	---	---	7.9	7.8
3	---	---	---	---	7.8	7.4	7.8	7.5	---	---	8.0	7.9
4	---	---	---	---	7.9	7.3	7.9	7.5	---	---	8.0	7.9
5	---	---	---	---	7.9	7.8	7.9	7.8	---	---	8.0	7.8
6	---	---	---	---	7.9	7.5	7.8	7.7	---	---	8.0	7.8
7	---	---	---	---	7.7	7.5	7.8	7.7	---	---	8.0	7.8
8	---	---	---	---	7.7	7.4	7.9	7.7	---	---	7.9	7.8
9	---	---	---	---	7.8	7.3	7.9	7.8	8.0	7.9	7.9	7.8
10	---	---	---	---	8.0	7.7	8.0	7.8	8.0	7.9	7.9	7.7
11	---	---	---	---	7.9	7.8	7.8	7.6	8.0	7.9	7.9	7.7
12	---	---	---	---	7.8	7.8	7.9	7.7	8.0	7.9	7.9	7.8
13	---	---	---	---	7.8	7.7	7.8	7.6	8.1	7.9	7.9	7.6
14	---	---	---	---	7.7	7.4	7.9	7.8	8.1	7.9	7.7	7.4
15	---	---	---	---	7.6	7.5	7.9	7.8	8.1	7.9	7.7	7.6
16	---	---	---	---	7.5	7.5	7.9	7.6	8.0	7.9	7.7	7.6
17	---	---	---	---	7.6	7.5	7.9	7.6	8.0	7.9	7.8	7.7
18	---	---	---	---	7.5	7.5	7.9	7.8	8.1	7.9	7.8	7.6
19	---	---	---	---	7.5	7.4	7.8	7.4	8.1	7.9	7.7	7.6
20	---	---	---	---	7.6	7.4	7.5	7.3	8.1	7.9	7.8	7.6
21	---	---	---	---	7.6	7.5	7.5	7.2	8.1	8.0	7.7	7.6
22	---	---	---	---	7.6	7.6	7.6	6.9	8.1	7.9	7.7	7.6
23	---	---	---	---	7.6	7.5	7.8	7.2	8.1	7.9	7.7	7.4
24	---	---	---	---	7.6	7.4	7.7	7.0	8.0	7.9	7.7	7.6
25	---	---	---	---	7.7	7.5	7.6	7.5	7.9	7.9	7.7	7.7
26	---	---	---	---	7.7	7.4	7.7	7.6	8.0	7.9	7.7	7.7
27	---	---	---	---	7.6	7.6	7.7	7.7	7.9	7.8	7.8	7.7
28	---	---	---	---	7.7	7.6	---	---	8.0	7.7	7.8	7.6
29	---	---	---	---	7.7	7.5	---	---	---	---	7.7	7.6
30	---	---	7.8	7.6	7.6	7.5	---	---	---	---	7.8	7.6
31	---	---	---	---	7.6	7.5	---	---	---	---	7.7	7.6
MONTH	8.2	7.9	7.8	7.6	8.0	7.3	8.0	6.9	8.1	7.7	8.0	7.4

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.7	7.5	7.9	7.6	7.6	7.4	7.7	7.5	8.2	7.9	---	---
2	7.8	7.7	7.8	7.6	7.6	7.4	7.6	7.6	8.1	7.8	---	---
3	7.9	7.7	7.8	7.6	7.7	7.6	7.7	7.4	7.9	7.3	---	---
4	7.7	7.6	7.8	7.6	7.8	7.7	7.7	7.5	7.8	7.3	---	---
5	7.7	7.6	7.7	7.5	7.8	7.7	7.6	7.7	7.9	7.6	---	---
6	7.8	7.7	7.7	7.7	7.8	7.7	7.8	7.6	7.9	7.5	---	---
7	7.7	7.6	7.8	7.8	7.7	7.5	7.8	7.6	7.6	7.2	---	---
8	7.8	7.7	7.7	7.5	7.6	7.5	7.8	7.5	7.6	7.2	---	---
9	7.8	7.7	7.8	7.6	7.7	7.6	7.9	7.6	8.0	7.5	---	---
10	7.6	7.6	7.9	7.8	7.7	7.6	8.0	7.6	7.6	7.2	---	---
11	7.7	7.5	7.9	7.9	7.6	7.5	8.1	7.8	7.7	7.4	---	---
12	7.7	7.4	7.8	7.7	7.6	7.5	8.2	7.8	7.8	7.5	---	---
13	7.4	7.3	7.8	7.5	7.7	7.6	8.2	8.0	7.8	7.6	7.5	7.4
14	7.5	7.4	7.9	7.6	7.8	7.7	8.1	7.3	7.9	7.7	7.4	6.9
15	7.6	7.5	7.9	7.6	7.7	7.7	7.8	7.6	8.0	7.8	7.6	6.9
16	7.7	7.5	7.9	7.5	7.6	7.4	7.8	7.6	7.8	7.7	7.7	7.4
17	7.8	7.6	7.9	7.7	7.4	7.3	8.1	7.8	7.8	7.6	7.6	6.9
18	8.1	7.8	7.8	7.6	7.4	7.3	8.1	7.8	7.9	7.6	7.6	6.9
19	8.0	7.6	7.8	7.7	7.3	7.1	8.0	7.7	7.8	7.6	7.6	7.0
20	7.7	7.5	7.8	7.7	7.4	7.3	8.4	7.9	7.9	7.7	7.5	7.1
21	7.8	7.7	7.9	7.6	7.5	7.3	8.2	7.7	8.1	7.7	7.6	7.2
22	7.8	7.6	7.9	7.8	7.6	7.4	7.9	7.5	8.1	7.8	7.8	7.5
23	7.7	7.6	7.8	7.7	7.6	7.5	7.9	7.4	8.1	7.8	7.9	7.7
24	7.7	7.6	7.7	7.4	7.6	7.5	7.9	7.7	8.1	7.9	7.9	7.7
25	7.6	7.6	7.7	7.6	7.6	7.5	8.1	7.9	8.0	7.8	7.9	7.6
26	7.6	7.6	7.7	7.6	7.5	7.2	7.9	7.7	8.1	7.8	7.9	7.7
27	7.6	7.6	7.6	7.5	7.4	7.2	7.8	7.6	8.1	7.9	7.9	7.6
28	7.6	7.6	7.7	7.5	7.6	7.4	7.8	7.6	8.0	7.8	8.0	7.7
29	7.6	7.5	7.7	7.5	7.6	7.4	7.9	7.6	8.4	7.7	7.9	7.8
30	7.6	7.5	7.7	7.6	7.6	7.4	8.0	7.8	8.1	7.6	7.8	7.5
31	---	---	7.7	7.4	---	---	8.1	7.8	---	---	---	---
MONTH	8.1	7.3	7.9	7.4	7.8	7.1	8.4	7.3	8.4	7.2	8.0	6.9
YEAR	8.4	6.9										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	20.5	20.0	13.0	12.0	7.0	5.0	3.0	2.5	2.5	2.0	4.5	3.5
2	20.0	17.0	15.0	12.5	7.0	6.0	2.5	2.0	3.5	2.5	4.0	2.5
3	17.0	15.5	17.0	14.5	6.5	5.5	1.5	1.0	2.5	2.0	4.0	3.0
4	17.5	15.0	16.5	16.5	6.0	4.5	2.0	1.0	2.0	1.0	4.0	3.0
5	16.5	15.5	17.5	16.0	4.5	2.5	4.5	2.0	2.5	1.5	5.0	3.0
6	17.0	15.5	18.5	17.5	3.5	3.0	5.0	4.5	1.5	1.0	5.0	3.0
7	16.5	15.5	18.0	16.0	3.0	1.5	5.5	5.0	1.5	.5	4.5	2.5
8	15.5	15.0	16.5	16.0	2.0	1.0	5.0	2.0	3.0	1.5	5.5	4.0
9	16.0	14.0	17.5	16.0	2.0	1.5	2.0	1.0	3.5	2.0	6.0	4.0
10	14.5	13.0	17.0	12.5	1.5	1.0	1.0	.5	3.0	1.5	6.5	4.5
11	14.0	13.5	12.0	8.5	1.5	1.0	1.5	.5	3.5	2.0	5.0	4.0
12	13.0	12.5	8.5	7.5	2.0	1.0	2.0	1.0	4.0	2.5	4.5	3.5
13	13.5	12.5	7.5	7.0	3.0	2.0	2.5	2.0	3.0	2.0	4.5	3.0
14	13.0	12.0	7.0	6.0	2.5	1.0	2.5	2.0	3.5	2.0	3.5	1.5
15	13.0	11.5	7.5	6.5	2.5	2.0	2.0	1.5	3.0	1.5	2.5	2.0
16	12.5	11.5	9.5	7.5	3.0	2.0	1.5	1.5	3.5	2.0	3.0	2.0
17	12.0	10.5	9.5	8.5	3.0	2.5	2.0	1.5	4.5	3.0	3.0	2.0
18	12.5	10.5	8.5	7.5	4.0	3.0	2.5	1.5	3.5	2.0	3.5	2.0
19	13.0	12.0	7.5	7.0	3.5	3.5	2.5	2.0	3.0	1.0	5.5	3.0
20	13.5	12.0	8.0	7.0	3.5	3.5	2.0	1.5	2.5	1.0	5.5	3.0
21	13.5	11.5	8.5	8.0	3.5	2.5	3.0	1.5	2.5	1.0	5.5	4.5
22	13.5	12.5	8.0	7.0	2.5	2.0	3.0	2.0	3.0	1.5	6.0	4.5
23	13.0	12.5	8.0	7.0	3.0	2.0	2.0	1.0	3.5	1.5	6.5	5.5
24	13.5	11.5	8.5	7.5	4.0	2.5	3.0	1.0	4.0	2.5	5.5	4.5
25	14.0	13.0	7.5	7.0	4.0	2.0	4.0	3.0	4.0	3.5	5.0	4.0
26	16.0	14.0	7.0	4.5	1.5	.5	3.5	.5	4.0	3.5	5.5	4.0
27	16.0	15.5	4.5	3.5	1.0	1.0	---	---	4.0	3.0	5.5	4.5
28	16.0	15.0	4.5	3.5	1.5	1.0	---	---	4.0	2.5	6.0	4.5
29	14.5	13.5	4.0	3.0	2.5	1.5	---	---	---	---	6.5	5.5
30	13.5	12.5	5.5	4.5	3.0	2.5	1.5	1.5	---	---	7.5	5.0
31	13.0	11.5	---	---	3.5	3.0	2.5	1.0	---	---	9.0	5.5
MONTH	20.5	10.5	18.5	3.0	7.0	.5	5.5	.5	4.5	.5	9.0	1.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.5	8.5	15.0	12.5	26.5	23.0	26.0	23.0	25.5	23.0	24.5	21.5
2	10.5	8.0	15.5	12.0	25.5	24.0	23.0	20.5	27.0	23.5	24.0	21.0
3	9.5	7.0	15.5	12.5	24.0	22.5	21.0	20.0	25.5	24.5	24.0	21.5
4	12.0	9.0	14.5	13.0	22.0	20.5	21.5	20.5	25.5	23.5	24.5	22.0
5	12.0	10.0	13.0	12.0	22.5	20.5	24.0	21.0	24.0	22.0	24.5	21.0
6	11.5	10.0	13.0	12.0	22.0	19.5	26.0	22.5	24.0	22.5	25.5	22.0
7	13.0	10.0	16.0	11.5	21.5	21.0	27.0	24.0	25.0	23.0	26.0	23.5
8	12.5	11.0	15.5	15.0	23.0	21.0	27.5	26.0	26.0	22.5	27.0	24.0
9	11.5	9.5	16.0	14.0	23.5	20.5	26.5	25.0	27.0	24.5	---	---
10	13.5	10.0	15.0	14.5	24.5	21.0	25.5	23.5	26.0	24.5	---	---
11	14.0	13.0	17.5	14.0	25.5	22.0	24.5	22.0	25.5	24.0	---	---
12	15.0	12.0	17.5	16.5	25.5	23.5	25.0	21.0	26.5	24.0	26.0	24.0
13	14.5	13.0	16.5	15.5	23.0	19.0	24.5	21.5	27.5	24.5	23.5	23.0
14	13.5	11.5	15.5	14.0	21.0	18.0	25.0	23.0	27.5	25.0	24.0	22.0
15	13.0	11.5	14.5	13.5	20.5	19.0	26.0	23.5	28.0	26.0	25.0	22.5
16	13.0	11.0	15.5	14.0	22.0	19.0	26.5	25.0	28.5	26.5	24.0	23.0
17	13.5	11.0	15.5	15.0	25.5	21.5	26.0	23.5	28.0	25.5	23.5	22.0
18	12.5	11.5	18.0	15.5	26.5	24.5	26.0	23.0	28.5	25.0	25.5	23.0
19	14.0	11.5	20.5	16.5	26.0	24.0	27.5	24.5	28.5	26.0	27.0	24.5
20	12.5	10.0	20.5	19.0	26.5	23.5	28.5	26.0	26.5	24.0	28.0	25.0
21	10.0	9.0	20.5	17.0	26.0	24.5	29.5	27.0	26.0	23.0	27.5	25.5
22	11.5	8.5	19.5	16.0	25.5	23.0	29.5	27.5	26.5	23.0	25.5	22.5
23	11.0	9.5	19.0	16.0	25.5	22.5	28.5	26.0	26.5	23.0	23.0	21.0
24	12.0	10.5	18.5	16.5	25.5	23.0	26.0	25.0	26.5	24.0	22.0	20.0
25	13.0	11.0	21.0	17.5	26.0	23.5	27.0	24.5	26.5	24.5	21.5	20.0
26	14.5	11.5	22.5	19.5	24.5	22.5	28.0	26.0	26.5	23.5	21.0	19.0
27	15.0	12.0	23.5	21.0	27.0	23.0	27.5	25.0	26.5	23.5	20.5	18.0
28	16.0	13.0	25.0	21.5	28.5	25.5	26.5	24.5	26.5	24.5	20.0	18.0
29	16.5	13.5	25.0	22.5	28.5	26.0	25.5	24.0	26.0	24.5	18.0	15.5
30	16.5	14.5	25.0	23.5	28.0	26.0	25.5	24.5	25.0	22.5	19.0	15.5
31	---	---	25.5	23.0	---	---	26.0	24.0	24.0	21.5	---	---
MONTH	16.5	7.0	25.5	11.5	28.5	18.0	29.5	20.0	28.5	21.5	28.0	15.5
YEAR	29.5	.5										

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.2	5.7	8.9	6.7	10.4	9.7	---	---	12.4	12.2	11.8	11.0
2	7.3	5.4	7.5	5.0	10.1	9.1	---	---	12.3	12.0	12.0	11.3
3	8.9	7.1	8.7	6.4	10.2	8.0	---	---	12.2	12.0	12.0	11.6
4	8.8	7.7	7.0	6.0	10.7	9.5	---	---	12.3	12.0	11.8	11.6
5	9.0	7.8	7.1	5.9	11.0	10.6	---	---	12.2	11.9	11.8	11.6
6	9.0	7.6	7.9	6.0	10.9	10.1	---	---	12.1	11.8	11.7	11.6
7	9.3	7.2	6.9	5.0	11.5	10.0	---	---	12.0	11.4	11.8	11.4
8	8.3	7.2	7.3	6.5	11.5	10.4	---	---	11.7	11.4	11.5	11.1
9	8.6	6.4	7.4	6.6	11.3	11.1	---	---	12.8	11.3	11.3	10.4
10	10.0	7.8	7.9	6.7	11.7	11.3	---	---	12.8	12.5	11.1	10.5
11	9.6	8.5	9.3	7.2	11.7	11.3	---	---	12.7	12.5	11.3	10.4
12	10.0	8.5	9.9	9.4	11.7	11.5	---	---	12.6	12.4	11.9	10.9
13	9.8	8.8	10.0	9.2	11.5	11.0	---	---	12.7	12.4	12.2	11.8
14	9.4	8.3	10.2	9.8	11.5	11.2	---	---	12.8	12.5	13.2	12.0
15	8.7	7.7	10.1	9.6	11.4	11.2	---	---	12.9	12.6	13.4	13.1
16	8.1	7.7	9.8	9.1	---	---	---	---	12.6	12.1	13.4	13.2
17	---	---	9.5	8.8	---	---	---	---	12.5	12.1	13.3	13.2
18	---	---	10.1	9.5	---	---	---	---	12.6	12.3	13.4	13.1
19	9.3	7.9	10.3	10.1	---	---	12.3	12.2	12.9	12.5	13.1	12.7
20	9.1	7.9	10.2	10.1	---	---	12.3	12.1	13.2	12.7	13.2	12.7
21	9.1	7.6	10.0	9.4	---	---	12.4	12.1	13.0	12.5	12.8	12.4
22	8.6	7.4	10.0	9.6	---	---	12.4	12.1	12.8	12.2	12.7	12.3
23	7.6	6.7	10.0	9.6	---	---	12.7	12.4	12.5	12.1	12.4	12.3
24	8.2	6.7	9.7	9.4	---	---	12.6	12.0	12.2	11.3	12.7	12.3
25	7.9	6.6	9.7	9.5	---	---	12.2	11.2	11.6	11.1	12.9	12.6
26	7.1	5.4	10.2	9.6	---	---	12.4	11.1	11.5	11.0	12.8	12.3
27	7.2	5.4	10.6	10.2	---	---	12.4	12.2	12.4	11.1	12.6	12.3
28	7.8	5.9	10.7	10.6	---	---	---	---	12.4	11.5	12.8	12.2
29	8.2	6.1	10.8	10.5	---	---	---	---	---	---	12.3	12.1
30	8.6	6.3	10.6	10.2	---	---	12.6	12.6	---	---	12.4	11.1
31	8.7	6.5	---	---	---	---	12.6	12.3	---	---	11.1	10.2
MONTH	10.0	5.4	10.8	5.0	11.7	8.0	12.7	11.1	13.2	11.0	13.4	10.2

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.3	10.0	10.5	8.5	6.6	5.4	---	---	7.8	5.2	7.7	4.8
2	10.8	9.9	10.6	8.8	6.6	5.1	---	---	7.1	4.9	8.0	4.9
3	11.2	10.1	10.6	8.3	6.8	5.2	---	---	5.3	4.3	7.7	4.8
4	---	---	10.0	7.9	7.9	5.9	---	---	6.1	4.2	8.4	4.8
5	---	---	8.5	6.6	7.9	6.4	---	---	8.1	4.5	9.0	4.7
6	---	---	8.4	7.5	7.6	5.9	---	---	7.1	5.7	0.8	4.4
7	---	---	8.6	7.2	6.4	5.3	---	---	6.9	5.4	---	---
8	---	---	8.8	7.9	5.2	4.9	---	---	7.7	5.3	---	---
9	---	---	8.1	7.3	---	---	---	---	10.0	7.4	---	---
10	---	---	8.9	7.9	---	---	---	---	8.3	5.2	---	---
11	---	---	9.1	8.2	---	---	---	---	8.9	7.2	---	---
12	---	---	8.0	7.1	---	---	8.7	6.7	9.7	8.0	---	---
13	9.8	9.2	8.5	6.5	---	---	8.0	5.1	9.6	7.8	---	---
14	10.1	9.6	9.1	7.6	---	---	6.3	.7	9.4	7.8	6.9	4.7
15	10.2	9.7	9.3	8.6	---	---	6.0	5.4	9.0	7.5	7.0	4.8
16	10.4	9.6	9.2	8.4	---	---	7.2	5.6	8.3	6.7	7.1	4.9
17	10.5	9.6	9.2	8.7	---	---	8.1	5.5	8.3	6.9	7.1	5.1
18	9.8	9.4	8.7	8.2	---	---	9.4	5.9	8.1	6.7	7.5	5.4
19	9.8	8.6	8.7	7.9	---	---	9.6	4.4	7.4	6.0	7.3	5.0
20	10.3	9.3	8.4	7.4	---	---	11.3	5.6	7.6	6.1	7.2	4.5
21	10.7	10.3	8.7	6.8	---	---	11.4	5.5	9.1	6.1	7.3	4.0
22	10.8	10.3	8.9	8.0	---	---	8.7	5.4	9.4	7.3	7.1	4.4
23	10.7	10.2	8.2	7.5	---	---	7.4	4.2	9.4	7.0	8.2	4.9
24	10.3	10.0	8.4	7.6	---	---	6.7	5.1	8.8	6.3	8.2	5.0
25	10.0	9.6	8.4	7.8	---	---	8.9	6.7	8.1	5.4	7.6	4.7
26	10.0	9.3	8.0	7.4	---	---	7.4	5.3	---	---	7.8	4.7
27	10.0	8.9	8.0	7.1	---	---	6.6	4.5	---	---	8.9	4.4
28	10.0	8.7	7.8	7.0	---	---	6.6	4.5	---	---	9.6	5.6
29	9.8	8.4	7.6	7.1	---	---	6.6	4.3	---	---	9.3	6.1
30	9.9	8.2	7.6	7.0	---	---	7.0	4.8	---	---	9.1	6.0
31	---	---	7.1	5.5	---	---	7.5	4.8	8.1	6.1	---	---
MONTH	11.2	8.2	10.6	5.5	7.9	4.9	11.4	.7	10.0	4.2	9.6	4.0
YEAR	13.4	.7										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OH--Continued
SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8	9.8	5	3.7	568	6480	49	109	32	93	27	31
2	8	11	5	4.5	138	864	38	76	42	118	25	29
3	14	20	5	5.2	95	451	34	56	36	94	16	19
4	6	8.0	6	7.5	55	227	32	46	39	91	13	15
5	9	12	6	7.3	68	314	33	47	33	73	12	14
6	8	11	6	6.5	169	1220	31	47	32	66	13	15
7	6	7.7	473	2510	65	319	30	48	38	75	20	23
8	59	132	112	257	50	190	968	9120	42	78	28	34
9	109	328	35	60	40	143	285	2090	33	56	36	49
10	55	114	103	408	32	102	93	389	37	59	83	156
11	30	53	98	286	27	80	78	272	41	63	127	317
12	21	33	57	146	68	198	66	228	32	49	165	677
13	16	23	47	122	150	526	68	252	39	60	250	1180
14	14	20	33	80	1690	42900	58	211	36	56	1520	29100
15	14	19	52	142	550	15100	40	126	31	45	635	13400
16	15	21	255	1280	405	6790	31	85	33	47	440	6230
17	17	28	508	4520	330	4510	31	77	26	37	408	4350
18	10	14	160	946	350	5140	30	70	20	28	350	3090
19	10	13	100	472	298	4060	35	73	18	24	360	3070
20	13	16	76	314	278	3140	31	60	18	24	330	3050
21	17	21	64	271	250	2330	45	82	20	27	440	5630
22	4	3.8	59	225	217	1610	20	36	23	30	340	3910
23	4	3.0	62	199	177	1030	25	41	29	35	222	2090
24	6	4.2	48	131	155	774	37	63	19	23	200	1670
25	9	6.2	28	68	1090	10100	126	330	14	17	180	1460
26	10	8.5	28	67	120	632	961	8150	14	17	444	4140
27	9	9.7	33	69	105	388	108	612	17	20	848	11900
28	8	8.6	28	55	75	231	85	390	22	26	245	2550
29	8	7.2	20	36	63	184	65	251	---	---	177	1360
30	5	3.6	315	2090	72	191	55	196	---	---	153	975
31	3	2.1	---	---	66	161	43	134	---	---	126	731
TOTAL	---	971.4	---	14788.7	---	110385	---	23767	---	1431	---	101265

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	107	537	21	35	29	49	6	6.7	8	6.3	6	4.4
2	77	306	12	17	24	36	108	159	9	7.3	7	4.0
3	411	2770	14	16	23	33	199	575	111	150	6	3.2
4	282	1960	4	4.5	17	23	18	31	50	47	4	2.0
5	450	4410	36	57	14	18	10	16	14	11	4	2.1
6	121	849	20	30	12	15	7	10	11	8.6	5	3.0
7	119	874	12	16	32	42	7	9.5	173	163	8	4.7
8	77	457	15	20	17	25	5	6.3	498	538	5	2.8
9	68	338	403	1480	12	15	5	6.0	75	101	4	2.2
10	68	290	72	196	12	14	9	10	302	978	4	2.1
11	71	311	32	75	12	13	11	11	65	140	4	2.0
12	57	229	156	417	15	16	6	6.1	31	50	46	45
13	55	183	495	2410	45	70	6	6.5	25	37	55	65
14	47	133	597	4110	14	16	340	2020	20	27	51	35
15	40	101	121	657	11	12	159	343	16	17	72	62
16	30	68	215	1530	11	12	43	51	14	11	61	40
17	25	52	97	581	11	11	23	26	10	7.8	55	36
18	33	70	65	318	10	8.1	17	27	17	13	48	40
19	140	514	54	222	89	215	18	31	63	48	31	24
20	660	6560	98	357	29	45	22	38	160	130	14	9.6
21	176	1170	256	1240	15	19	17	26	25	19	11	8.0
22	62	293	54	184	11	12	27	33	19	13	12	9.8
23	59	218	48	136	8	8.2	79	107	13	8.4	11	8.5
24	55	184	849	8160	8	9.3	189	291	12	8.1	8	5.7
25	37	111	138	723	8	9.4	42	52	10	7.0	6	3.8
26	25	65	82	306	637	2100	21	24	10	6.5	4	2.2
27	24	55	60	172	40	76	58	70	8	4.8	4	2.2
28	18	37	50	127	16	25	69	89	8	5.0	3	1.8
29	22	41	42	93	9	12	70	74	11	7.1	4	2.2
30	22	38	34	70	8	9.8	15	15	9	6.6	5	2.7
31	---	---	45	97	---	---	9	7.8	9	7.5	---	---
TOTAL	---	23224	---	23856.5	---	2968.8	---	4177.9	---	2584.0	---	436.0

TOTAL LOAD FOR YEAR: 309855.3 TONS.

04208502 BIG CREEK AT CLEVELAND, OH

LOCATION.--Lat 41°27'01", long 81°43'18", Cuyahoga County, Hydrologic Unit 04110002, on right bank 8 ft (2 m) downstream from footbridge in Brookside Park, 0.2 mi (0.3 km) upstream from bridge on Fulton Road and 2.5 mi (4.0 km) upstream from mouth.

DRAINAGE AREA.--35.3 mi² (91.4 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 620.7 ft (189.19 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records fair except those for periods of no gage-height record, which are poor. Flow slightly regulated by industry upstream from station. Water-quality data collected at this site 1972 to 1977.

AVERAGE DISCHARGE.--6 years, 51.4 ft³/s (1.456 m³/s), 19.77 in/yr (502 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,100 ft³/s (258 m³/s) Aug. 24, 1975, gage height, 16.20 ft (4.938 m) (from floodmarks), from rating curve extended above 500 ft³/s (14.2 m³/s) on basis of slope-area measurements of peak flow; minimum daily, 2.3 ft³/s (0.065 m³/s) Sept. 16-17, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 1,200 ft³/s (34.0 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 14	0545	*2010	56.9	*10.19	3.106	Mar. 14	0430	1410	39.9	8.38	2.554

Minimum daily discharge, 9.5 ft³/s (0.27 m³/s) Sept. 6-9.

Note: No gage-height record July 25 to Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	11	145	16	32	20	36	16	21	20	12	13
2	32	11	41	16	30	20	24	15	18	90	13	16
3	24	12	34	16	28	20	207	18	19	60	60	12
4	18	18	29	16	26	20	205	25	18	25	20	11
5	15	17	41	17	26	20	232	85	20	20	15	10
6	32	14	72	19	24	20	152	29	19	19	13	9.5
7	18	162	41	28	24	22	101	20	94	20	30	9.5
8	72	29	34	420	22	23	39	65	24	17	90	9.5
9	74	16	32	101	22	48	31	86	18	18	40	9.5
10	25	100	30	56	22	91	29	25	16	15	50	10
11	20	27	30	45	22	124	91	21	14	13	25	14
12	20	48	29	31	22	227	36	94	97	12	20	50
13	18	32	207	26	20	232	24	171	34	16	18	30
14	17	21	1170	24	20	818	19	196	15	25	16	16
15	16	32	312	22	20	287	20	103	13	17	15	20
16	34	94	148	22	20	121	18	68	13	13	14	15
17	25	152	119	20	20	79	26	49	15	11	13	50
18	18	31	110	20	20	70	29	31	13	11	80	40
19	77	21	65	20	20	119	106	25	45	12	50	25
20	43	19	74	20	20	124	274	97	14	13	30	16
21	16	40	37	20	20	340	106	97	11	13	18	14
22	14	18	26	20	20	114	48	30	12	15	14	12
23	13	17	24	22	20	54	31	26	43	55	15	11
24	13	18	51	30	20	37	28	252	333	50	13	11
25	12	34	114	140	20	83	21	48	34	17	12	12
26	15	31	23	395	20	202	19	30	22	30	11	15
27	12	21	19	121	20	215	18	24	18	70	10	22
28	10	21	18	67	20	76	16	23	16	20	12	21
29	13	18	17	50	---	44	18	19	14	17	20	20
30	15	220	16	39	---	32	16	93	13	14	14	22
31	13	---	16	35	---	70	---	56	---	13	19	---
TOTAL	792	1305	3124	1894	620	3772	2020	1937	1056	761	782	546.0
MEAN	25.5	43.5	101	61.1	22.1	122	67.3	62.5	35.2	24.5	25.2	18.2
MAX	77	220	1170	420	32	818	274	252	333	90	90	50
MIN	10	11	16	16	20	20	16	15	11	11	10	9.5
CFSM	.72	1.23	2.86	1.73	.63	3.46	1.91	1.77	1.00	.69	.71	.52
IN.	.83	1.38	3.29	2.00	.65	3.97	2.13	2.04	1.11	.80	.82	.58

CAL YR 1977 TOTAL 20624.5 MEAN 56.5 MAX 1170 MIN 8.0 CFSM 1.60 IN 21.73
WTR YR 1978 TOTAL 18609.0 MEAN 51.0 MAX 1170 MIN 9.5 CFSM 1.45 IN 19.61

04208502 BIG CREEK AT CLEVELAND, OHIO--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
MAR 21...	1400	578	654	1020	32	44	56
APR 20...	1130	475	465	596	42	54	67
MAY 24...	0630	760	1770	3630	31	43	58

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM
MAR 21...	70	83	90	93	97	100
APR 20...	82	92	97	100	--	--
MAY 24...	75	87	93	98	100	--

04208502 BIG CREEK AT CLEVELAND, OH--Continued

SEDIMENT ANALYSES

PERIOD OF DAILY RECORD.--Suspended sediment discharge: February to September 1978 (discontinued).

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1									5	.43	8	.43
2									5	.41	5	.27
3									5	.38	7	.38
4									5	.35	4	.22
5									5	.35	3	.16
6									5	.32	6	.32
7									5	.32	4	.22
8									4	.24	4	.25
9									4	.24	11	1.4
10									4	.24	18	4.4
11									4	.24	13	4.4
12									4	.24	14	8.6
13									4	.22	68	43
14									4	.22	553	1220
15									4	.22	84	65
16									3	.16	38	12
17									3	.16	27	5.8
18									4	.22	37	7.0
19									5	.27	88	28
20									6	.32	83	28
21									5	.27	335	308
22									4	.22	52	16
23									4	.22	23	3.4
24									4	.22	12	1.2
25									7	.38	35	7.8
26									5	.27	59	32
27									6	.32	80	46
28									10	.54	22	4.6
29									---	---	14	1.7
30									---	---	10	.86
31									---	---	63	12
TOTAL									---	7.99	---	1863.41
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	18	1.7	4	.17	10	.57	7	.38	7	.23	8	.28
2	12	.78	6	.24	5	.24	174	42	4	.14	8	.35
3	159	89	4	.19	9	.46	108	17	124	20	5	.16
4	363	201	15	1.0	9	.44	16	1.1	139	7.5	3	.09
5	230	144	72	17	6	.32	7	.38	19	.77	3	.08
6	46	19	3	.23	6	.31	5	.26	8	.28	6	.15
7	34	9.3	3	.16	94	24	5	.27	7	.57	10	.26
8	15	1.6	66	12	7	.45	3	.14	326	79	7	.18
9	13	1.1	99	23	8	.39	3	.15	45	4.9	10	.26
10	8	.63	4	.27	8	.35	2	.08	292	39	8	.22
11	58	14	6	.34	8	.30	5	.18	28	1.9	8	.30
12	15	1.5	98	25	94	25	4	.13	9	.49	278	38
13	7	.45	175	81	23	2.1	5	.22	8	.39	35	2.8
14	4	.21	134	71	8	.32	20	1.4	15	.65	20	.86
15	7	.38	40	11	8	.28	8	.37	13	.53	186	10
16	5	.24	18	3.3	9	.32	5	.18	13	.49	62	2.5
17	5	.35	18	2.4	7	.28	5	.15	10	.35	60	8.1
18	36	2.8	10	.84	8	.28	5	.15	9	1.9	79	8.5
19	114	33	5	.34	39	4.7	5	.16	7	.94	12	.81
20	205	152	150	39	12	.45	9	.32	62	5.0	11	.48
21	42	12	65	17	8	.24	11	.39	9	.44	7	.26
22	18	2.3	5	.41	8	.26	8	.32	7	.26	8	.26
23	12	1.0	3	.21	84	9.8	185	27	8	.32	6	.18
24	5	.38	585	398	742	667	54	7.3	5	.18	5	.15
25	4	.23	18	2.3	132	12	15	.69	6	.19	6	.19
26	3	.15	6	.49	200	12	9	.73	11	.33	9	.36
27	7	.34	6	.39	52	2.5	13	2.5	6	.16	8	.48
28	5	.22	7	.43	11	.48	24	1.3	10	.32	8	.45
29	5	.24	5	.26	8	.30	9	.41	24	1.3	7	.38
30	5	.22	102	26	8	.28	8	.30	7	.26	8	.48
31	---	---	50	7.6	---	---	6	.21	8	.41	---	---
TOTAL	---	690.12	---	741.57	---	766.42	---	106.17	---	169.20	---	77.57

TOTAL LOAD FOR PERIOD: 4422.45 TONS.

04208503 CUYAHOGA RIVER AT LOWER HARVARD BRIDGE IN CLEVELAND, OH

LOCATION.--Lat 41°26'51", long 81°41'05", Cuyahoga County, Hydrologic Unit 04110002, at bridge on Harvard Avenue in Cleveland and 0.2 mi (0.3 km) downstream from Big Creek.

DRAINAGE AREA.--786 mi² (2036 km²).

PERIOD OF RECORD.--October 1977 to September 1978 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	STREAM-FLOW (CFS)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)
SEP 28...	1400	698	698	950	7.4	19.5	21.0	6.6	73	35	7600

DATE	HARD-NESS (MG/L AS CACO3)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, TOTAL (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
SEP 28...	240	140	.1	7.8	555	43	598	1.9	2.7	1.4

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	ARSENIC TOTAL (UG/L AS AS)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)
SEP 28...	4.1	6.0	27	.44	.20	.61	3	2	20	13

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS (UG/L)	OIL AND GREASE (MG/L)
SEP 28...	1200	17	150	<.5	66	0	170	.10	13	0

04208503 CUYAHOGA RIVER AT LOWER HARVARD BRIDGE IN CLEVELAND, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAMFLOW (CFS)	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, AIR (DEG C)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (LOW LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
OCT											
26...	1300	530	530	1140	7.4	21.5	17.0	6.3	65	30	5600
NOV											
10...	1530	2160	2160	630	7.5	4.0	15.0	5.5	54	160	--
23...	1300	1820	1820	710	7.6	7.0	10.0	9.8	87	49	--
29...	1530	1040	1040	1280	7.6	-1.0	6.0	10.2	82	78	3200
DEC											
20...	1530	4660	4660	580	7.9	5.0	6.0	11.8	94	43	34000
JAN											
24...	1500	1100	1100	1250	7.7	2.0	2.5	11.2	82	87	17000
FEB											
23...	1600	1350	1350	1120	7.9	-3.0	3.5	11.2	84	130	3000
MAR											
21...	1545	7480	7480	640	7.9	7.0	6.5	10.3	84	95	75000
24...	1400	3360	3360	560	8.0	-4.0	5.5	12.0	95	25	--
28...	1500	4400	4400	600	7.4	10.0	6.5	11.8	96	45	--
29...	1130	3430	3430	590	7.6	7.0	6.5	11.8	96	35	--
30...	1000	2900	2900	585	7.8	1.0	5.0	12.0	94	30	--
APR											
12...	1200	2200	2200	720	7.5	15.0	12.5	9.5	89	30	40000
19...	1230	2150	2150	770	7.7	23.0	14.0	8.7	84	60	--
20...	1530	5700	5700	540	7.8	4.5	9.5	10.3	90	65	--
21...	1000	3300	3300	630	7.8	2.0	9.0	10.4	90	40	--
MAY											
03...	1230	821	821	860	7.6	18.0	13.0	8.8	83	35	K80
09...	1015	2160	2160	750	7.7	16.0	15.0	9.0	88	75	--
16...	1400	3550	3550	600	7.6	20.0	16.0	8.3	83	60	--
JUN											
15...	1200	654	654	960	7.9	18.0	19.0	5.7	61	40	22000
JUL											
06...	1130	680	680	990	7.6	26.0	23.5	6.2	72	34	1600
AUG											
08...	1630	959	959	840	7.8	23.0	26.0	3.7	45	69	200000
SEP											
20...	1400	632	632	1150	7.5	35.0	27.0	3.4	42	46	K180000

DATE	HARDNESS (MG/L AS CACO3)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, TOTAL (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT										
26...	270	190	.0	7.7	696	43	739	2.9	4.0	2.4
NOV										
10...	--	72	--	7.2	385	350	735	1.7	1.6	--
23...	--	96	--	8.0	458	102	560	2.3	1.3	--
29...	240	250	.4	8.4	749	93	842	3.3	2.5	4.1
DEC										
20...	150	65	.3	6.1	298	256	554	1.2	.68	1.1
JAN										
24...	250	240	.5	8.5	706	80	786	1.2	4.0	.70
FEB										
23...	260	180	.6	8.9	657	85	742	.78	6.1	7.9
MAR										
21...	140	120	.5	6.9	383	727	1110	1.1	.72	2.8
24...	--	78	--	6.4	342	145	487	1.1	.91	--
28...	--	82	--	6.6	350	207	557	1.2	.86	--
29...	--	78	--	6.3	330	212	542	1.1	1.0	--
30...	--	73	--	6.2	350	143	493	1.0	1.1	--
APR										
12...	200	95	.2	5.5	411	94	505	.90	1.7	.70
19...	--	100	--	6.9	452	117	569	.97	2.9	--
20...	--	70	--	6.0	279	442	721	.95	.62	--
21...	--	77	--	5.8	363	125	488	1.0	.76	--
MAY										
03...	250	130	.3	4.5	525	33	558	.97	4.0	.90
09...	--	97	--	4.8	447	359	806	1.7	1.7	--
16...	--	72	--	6.0	357	295	652	.88	.73	--
JUN										
15...	260	130	.3	8.1	561	49	610	1.8	4.3	5.7
JUL										
06...	260	160	.2	8.3	585	55	640	2.2	3.1	.80
AUG										
08...	220	120	.6	7.8	470	336	806	2.3	1.6	2.9
SEP										
20...	250	180	1.3	9.0	656	49	705	3.4	.49	4.1

04208503 CUYAHOGA RIVER AT LOWER HARVARD BRIDGE IN CLEVELAND, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	ARSENIC TOTAL (UG/L AS AS)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT										
26...	6.4	9.3	41	.90	.17	.52	1	2	40	26
NOV										
10...	--	--	--	3.4	.18	.55	4	90	<10	130
23...	--	--	--	.84	--	--	2	10	80	45
29...	6.6	9.9	44	1.4	.29	.89	2	31	110	63
DEC										
20...	1.8	3.0	13	.39	.03	.09	2	0	60	36
JAN										
24...	4.7	5.9	26	1.4	.16	.49	1	7	80	47
FEB										
23...	14	15	65	2.9	.18	.55	2	35	280	150
MAR										
21...	3.5	4.6	20	.79	.09	.28	4	14	40	69
24...	--	--	--	.25	.05	.15	2	2	10	26
28...	--	--	--	.55	.05	.15	2	8	30	37
29...	--	--	--	.38	.03	.09	2	2	40	28
30...	--	--	--	.26	.05	.15	1	0	20	19
APR										
12...	2.4	3.3	15	.20	.07	.21	2	5	10	29
19...	--	--	--	.60	.20	.61	2	5	10	43
20...	--	--	--	.83	.06	.18	3	3	50	46
21...	--	--	--	.41	.08	.25	2	0	20	41
MAY										
03...	4.9	5.9	26	.50	.25	.77	3	4	20	20
09...	--	--	--	1.4	.16	.49	4	6	60	68
16...	--	--	--	.58	.09	.28	3	0	30	40
JUN										
15...	10	12	52	.54	.26	.80	3	3	20	22
JUL										
06...	3.9	6.1	27	.44	.22	.67	2	0	10	21
AUG										
08...	4.5	6.8	30	.20	.20	.61	4	8	50	59
SEP										
20...	4.6	8.0	35	.95	.33	1.0	3	10	60	22

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS (UG/L)	OIL AND GREASE (MG/L)
OCT										
26...	2400	43	170	<.5	140	0	190	.01	6	1
NOV										
10...	--	170	--	<.5	--	--	--	--	--	--
23...	--	52	--	<.5	--	--	--	--	--	--
29...	5400	78	200	<.5	83	0	310	.03	15	2
DEC										
20...	12000	10	30	<.5	35	0	150	.01	10	2
JAN										
24...	2900	52	240	<.5	62	1	170	.03	35	64
FEB										
23...	7800	240	400	<.5	70	0	670	.42	24	13
MAR										
21...	20000	110	450	<.5	41	1	320	.03	2	6
24...	--	25	--	<.5	--	--	--	--	--	--
28...	--	42	--	<.5	--	--	--	--	--	--
29...	--	23	--	<.5	--	--	--	--	--	--
30...	--	20	--	<.5	--	--	--	--	--	--
APR										
12...	2300	10	170	<.5	47	0	80	.01	4	3
19...	--	39	--	<.5	--	--	--	--	--	--
20...	--	71	--	<.5	--	--	--	--	--	--
21...	--	160	--	<.5	--	--	--	--	--	--
MAY										
03...	1500	22	210	<.5	43	0	90	.01	12	2
09...	--	110	--	<.5	--	--	--	--	--	--
16...	--	50	--	<.5	--	--	--	--	--	--
JUN										
15...	1100	21	250	<.5	50	0	110	.01	15	0
JUL										
06...	1100	16	140	.5	43	0	110	.01	7	0
AUG										
08...	11000	58	300	<.5	100	1	220	.02	1	1
SEP										
20...	1600	80	170	<.5	71	1	730	.02	27	0

04208506 CUYAHOGA RIVER AT WEST THIRD STREET BRIDGE, IN CLEVELAND, OH

LOCATION.--Lat 41°29'17", long 81°41'07", in T.7 N., R.12 W., Cuyahoga County, Hydrologic Unit 04110002, on left bank just upstream from bridge on West Third Street in Cleveland, 3.0 mi (4.8 km) upstream from mouth, and 1.2 mi (1.9 km) downstream from turning basin.

DRAINAGE AREA.--798 mi² (2,067 km²).

PERIOD OF RECORD.--November 1966 to current year.

PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: November 1966 to current year.
pH: November 1966 to current year.
WATER TEMPERATURES: November 1966 to current year.
DISSOLVED OXYGEN: November 1966 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. No discharge records available.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 3,000 micromhos July 16, 17, 1977; minimum, 318 micromhos July 12, 1976.
pH: Maximum, 9.3 units Sept. 14, 1969; minimum, 4.3 units May 16, 1969.
WATER TEMPERATURES: Maximum, 35.0°C July 24, 1967; minimum, 1.0°C Jan. 1, 1969.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher on several days during 1968, 1970; minimum, 0.0 mg/L on many days during 1967, 1968, 1971 to 1974, 1977, 1978.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 2,460 micromhos Jan. 26; minimum, 429 micromhos May 24.
pH: Maximum, 8.3 units Jan. 10; minimum, 5.9 units Jan. 8.
WATER TEMPERATURES: Maximum, 31.5°C Sept. 11; minimum, 1.5°C Jan. 26, 27.
DISSOLVED OXYGEN: Maximum, 12.2 mg/L Feb. 23; minimum, 0.0 mg/L on many days during May through September.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1190	1110	1260	1240	1340	717	---	---	1080	1030	1190	1140
2	1150	1020	1330	1260	765	717	---	---	1070	1040	1230	1170
3	1030	900	1430	1330	816	723	---	---	1100	1040	1240	1190
4	927	876	1460	1370	951	849	1140	1110	1170	1110	1360	1220
5	1060	936	1370	1250	948	813	1120	1040	1190	1130	1440	1370
6	1040	951	1260	1180	1250	888	1270	1110	1190	1120	1430	1360
7	1010	969	1140	738	1140	987	1310	1250	1200	1160	1390	1320
8	975	903	843	717	1010	927	1470	774	1190	1170	1330	1310
9	1760	780	843	753	945	909	882	735	1210	1180	1330	1250
10	1580	843	900	723	969	924	885	861	1290	1170	1530	1300
11	933	822	777	717	972	915	912	858	1410	1270	1640	1510
12	1030	924	894	753	969	867	873	825	1430	1370	1540	1450
13	1150	1010	1250	906	1600	864	945	864	1410	1310	1430	1130
14	1170	1110	1100	1020	2070	579	1010	948	1420	1380	1130	504
15	1140	1070	1050	999	591	519	1110	1020	1550	1330	552	486
16	1090	960	984	819	597	504	1120	999	1610	1580	555	516
17	1010	891	810	624	621	558	1040	987	1610	1340	573	552
18	1050	990	705	660	588	480	1090	1030	---	---	624	573
19	1070	1010	717	684	---	---	1240	1060	---	---	666	627
20	1050	1010	768	702	---	---	1230	1160	---	---	678	528
21	1030	987	780	732	---	---	1220	1170	---	---	657	555
22	1060	1000	815	732	---	---	1230	1190	1220	1180	561	534
23	1090	1060	816	774	---	---	1160	1120	1170	1110	531	507
24	1130	1070	852	816	---	---	1260	1100	1200	1140	537	516
25	1190	1130	900	852	---	---	2090	1240	1270	1200	525	499
26	1270	1190	924	876	---	---	2460	1530	1290	1260	603	531
27	1350	1270	1050	906	---	---	1520	1260	1300	1160	---	---
28	1380	1290	1250	1050	---	---	1260	1130	1180	1140	---	---
29	1300	1250	1400	1230	---	---	1130	1020	---	---	---	---
30	1260	1250	1730	1350	---	---	1030	963	---	---	549	528
31	1260	1240	---	---	---	---	1050	1010	---	---	597	516
MONTH	1760	780	1730	624	2070	480	2460	735	1610	1030	1640	486

04208506 CUYAHOGA RIVER AT WEST THIRD STREET BRIDGE, IN CLEVELAND, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	573	543	870	631	780	723	1040	1010	891	858	957	927
2	612	579	840	822	831	777	1090	984	933	870	999	960
3	681	573	942	837	924	828	936	609	963	699	1010	996
4	642	570	972	939	945	915	882	840	867	708	1000	966
5	615	516	945	897	969	948	927	864	915	864	966	945
6	615	552	912	867	975	936	969	930	936	915	987	969
7	594	555	939	900	957	927	1010	972	987	939	987	969
8	561	552	942	903	933	843	1020	1010	987	702	978	945
9	564	549	897	774	960	858	1010	972	828	765	1020	954
10	576	555	780	699	972	912	972	948	888	684	1080	1020
11	693	582	765	702	915	885	999	954	846	702	1090	1040
12	711	639	786	762	966	915	1020	999	786	705	1050	804
13	711	663	771	657	951	858	1070	1020	786	738	831	705
14	741	714	630	561	954	858	1200	1060	888	750	951	834
15	768	720	666	576	954	888	1100	621	936	891	1020	858
16	780	765	714	591	927	888	741	630	930	888	876	795
17	789	762	618	591	1050	933	816	741	951	924	1080	894
18	798	765	621	597	1100	1060	861	825	1030	951	1010	726
19	813	771	636	609	1130	999	918	864	1060	789	876	714
20	768	543	648	618	1000	795	951	921	843	630	915	876
21	609	534	672	573	849	756	948	906	756	651	1080	930
22	633	606	684	639	936	846	---	---	900	771	1160	1070
23	687	630	714	684	999	933	---	---	924	897	1150	1070
24	687	666	717	429	1020	1000	---	---	981	927	1070	996
25	708	672	582	477	1010	987	852	732	996	978	993	969
26	759	699	630	582	999	561	825	792	1010	996	1000	984
27	831	771	690	636	792	573	951	828	1030	1010	1070	1000
28	822	795	726	699	912	804	1020	846	1050	1020	1120	1070
29	858	807	717	696	957	903	990	825	1060	972	1130	1110
30	882	825	705	657	1010	957	996	864	972	924	1110	1100
31	---	---	729	672	---	---	885	864	942	927	---	---
MONTH	882	516	972	429	1130	561	1200	609	1060	630	1160	705
YEAR	2460	429										

04208506 CUYAHOGA RIVER AT WEST THIRD STREET BRIDGE, IN CLEVELAND, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.3	7.0	7.7	7.6	7.7	7.4	---	---	8.0	7.5	7.7	7.6
2	7.4	7.3	7.7	7.4	7.9	7.7	---	---	7.8	7.4	7.8	7.3
3	7.4	7.3	7.6	7.3	8.0	7.4	---	---	8.0	7.6	7.8	7.6
4	7.5	7.3	---	---	8.1	7.8	7.5	7.2	8.0	7.5	7.7	7.5
5	7.5	7.3	---	---	8.3	7.9	7.9	7.2	7.9	7.5	7.8	7.2
6	7.4	7.2	---	---	8.2	8.0	7.9	7.6	8.0	7.7	7.8	7.2
7	7.6	7.4	---	---	8.2	8.1	7.6	6.9	7.9	7.7	7.8	7.7
8	7.6	7.5	---	---	8.2	7.9	7.8	5.9	7.9	7.4	7.7	7.6
9	7.7	7.5	---	---	8.3	7.8	8.2	8.0	7.9	7.5	7.7	7.4
10	7.6	7.4	---	---	8.2	8.0	8.3	8.0	7.9	7.4	7.6	7.0
11	7.6	7.4	---	---	8.2	7.9	8.2	8.0	7.7	7.0	7.5	6.4
12	7.7	7.4	---	---	8.1	7.8	8.2	7.9	7.6	7.1	7.3	6.8
13	7.8	7.6	---	---	7.9	7.4	8.2	6.0	7.9	7.5	7.8	7.1
14	7.8	7.5	---	---	7.8	7.2	8.2	8.1	7.9	7.6	7.6	6.1
15	7.7	7.5	---	---	7.3	7.0	8.1	7.9	7.9	7.4	7.0	6.6
16	7.7	7.6	---	---	---	---	8.0	7.9	7.8	7.5	7.8	6.9
17	7.7	7.5	---	---	---	---	8.0	7.8	7.9	7.7	7.8	7.7
18	7.8	7.4	---	---	---	---	8.0	7.8	---	---	7.8	7.6
19	7.7	7.5	---	---	---	---	8.3	7.8	---	---	7.8	7.7
20	7.7	7.5	---	---	---	---	8.0	7.8	---	---	7.8	7.6
21	7.5	7.3	---	---	---	---	7.8	7.4	---	---	7.9	7.6
22	7.7	7.5	---	---	---	---	8.0	7.4	8.0	7.9	7.8	7.6
23	7.7	7.5	---	---	---	---	8.0	7.4	8.0	7.5	7.8	7.6
24	7.6	7.4	---	---	---	---	7.6	6.7	7.7	7.3	7.7	7.5
25	7.7	7.5	---	---	---	---	7.1	6.6	7.6	7.4	7.6	7.5
26	7.6	7.4	---	---	---	---	7.7	6.9	7.7	7.5	7.7	7.6
27	7.6	7.4	---	---	---	---	7.9	7.5	7.7	7.6	---	---
28	7.7	7.6	---	---	---	---	7.8	7.2	7.7	7.3	---	---
29	7.6	7.5	---	---	---	---	7.7	7.3	---	---	---	---
30	7.6	7.5	7.7	7.5	---	---	8.1	7.5	---	---	7.8	7.7
31	7.6	7.5	---	---	---	---	8.0	7.6	---	---	7.8	7.6
MONTH	7.8	7.0	7.7	7.3	8.3	7.0	8.3	5.9	8.0	7.0	7.9	6.1

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.8	7.6	7.6	7.5	7.2	6.9	7.0	7.0	7.3	7.1	7.4	7.3
2	7.8	7.7	7.6	7.4	7.1	6.9	7.1	6.8	7.3	7.1	7.4	7.2
3	7.9	7.6	7.6	7.5	7.1	7.0	7.1	6.9	7.3	7.2	7.4	7.3
4	8.1	7.6	7.6	7.5	7.1	6.9	7.0	6.8	7.3	7.1	7.4	7.3
5	8.0	7.7	7.5	7.4	7.1	7.0	6.9	6.8	7.3	7.2	7.5	7.3
6	7.8	7.7	7.4	7.3	7.1	6.9	7.1	6.8	7.3	7.2	7.4	7.2
7	7.9	7.7	7.4	7.3	7.1	7.0	7.1	6.8	7.3	7.2	7.4	7.2
8	7.8	7.7	7.5	7.3	7.1	7.0	7.1	7.0	7.4	7.1	7.4	7.3
9	7.8	7.6	7.5	7.3	7.1	6.9	7.1	6.9	7.3	7.1	7.5	7.4
10	7.8	7.6	7.5	7.3	7.2	6.9	7.1	7.0	7.4	7.3	7.5	7.3
11	7.8	7.6	7.5	7.3	7.1	6.9	7.1	7.0	7.5	7.2	7.5	7.4
12	7.8	7.6	7.6	7.4	7.1	6.9	7.1	7.0	7.3	7.2	7.5	7.4
13	7.8	7.7	7.5	7.3	7.2	7.1	7.0	6.9	7.4	7.1	7.5	7.3
14	7.8	7.6	7.4	7.3	7.1	6.9	7.1	6.9	7.4	7.2	7.4	7.1
15	7.7	7.6	7.5	7.4	7.1	6.9	7.1	6.7	7.4	7.2	7.4	7.3
16	7.7	7.5	7.6	7.3	7.0	6.9	7.0	6.9	7.3	7.2	7.4	7.3
17	7.7	7.5	7.4	7.2	7.1	7.0	7.0	6.9	7.4	7.2	7.4	7.3
18	7.7	7.6	7.4	7.2	7.1	6.9	7.1	6.9	7.4	7.1	7.4	7.3
19	7.6	7.3	7.4	7.2	7.1	7.0	7.1	6.8	7.4	7.1	7.4	7.3
20	7.7	7.5	7.4	7.2	7.1	6.9	7.1	6.9	7.4	7.3	7.4	7.2
21	7.8	7.6	7.4	7.2	7.0	6.9	7.1	6.9	7.3	7.2	7.5	7.3
22	7.7	7.5	7.2	7.1	7.1	6.9	---	---	7.4	7.2	7.5	7.4
23	7.7	7.4	7.3	7.1	7.1	6.9	---	---	7.4	7.2	7.5	7.4
24	7.7	7.5	7.3	7.1	7.0	6.9	---	---	7.4	7.2	7.5	7.3
25	7.8	7.6	7.3	7.0	7.0	6.8	7.1	6.9	7.3	7.3	7.5	7.4
26	7.7	7.6	7.4	7.2	7.2	6.9	7.2	7.0	7.4	7.2	7.5	7.4
27	7.7	7.5	7.2	7.0	7.0	6.8	7.2	7.1	7.4	7.3	7.5	7.3
28	7.6	7.4	7.2	7.0	7.1	7.0	7.2	7.2	7.4	7.3	7.5	7.5
29	7.8	7.4	7.2	6.9	7.0	6.9	7.2	7.1	7.4	7.3	7.6	7.4
30	7.8	7.6	7.2	7.1	7.1	6.9	7.2	7.2	7.4	7.3	7.6	7.4
31	---	---	7.1	6.9	---	---	7.2	7.2	7.4	7.3	---	---
MONTH	8.1	7.3	7.6	6.9	7.2	6.8	7.2	6.7	7.5	7.1	7.6	7.1
YEAR	8.3	5.9										

04208506 CUYAHOGA RIVER AT WEST THIRD STREET BRIDGE, IN CLEVELAND, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	25.0	24.0	19.5	19.0	8.0	6.5	---	---	4.0	3.0	8.5	7.5
2	24.0	22.5	19.5	19.0	8.0	7.0	---	---	4.5	4.0	8.5	8.0
3	22.5	20.5	20.0	19.5	7.5	7.0	---	---	5.5	5.0	8.5	8.0
4	20.5	20.5	21.0	20.0	7.0	7.0	5.5	5.0	5.0	4.5	8.5	8.0
5	21.0	20.0	21.5	21.0	7.0	5.5	6.5	5.5	5.0	4.5	8.0	7.5
6	21.0	20.0	22.0	21.0	5.5	4.5	8.0	6.5	5.0	4.5	8.5	8.0
7	20.5	20.5	22.5	17.5	4.0	3.0	8.0	7.5	4.5	4.0	9.0	8.0
8	20.5	19.5	19.0	17.5	3.5	3.5	8.0	3.5	5.0	4.0	9.0	8.5
9	19.5	17.5	20.0	19.0	4.0	3.5	3.5	2.5	6.5	4.5	9.5	8.5
10	18.0	17.0	20.0	16.0	4.0	3.0	2.5	2.0	7.0	6.0	9.5	8.0
11	18.0	17.0	16.0	13.5	3.5	3.0	3.5	2.5	7.0	6.5	8.5	7.0
12	17.5	17.0	13.5	11.0	4.0	3.5	3.5	3.5	7.5	6.5	7.5	5.5
13	17.5	17.0	11.0	10.0	6.0	3.5	4.5	3.5	7.0	6.5	5.5	5.0
14	18.0	17.0	10.5	10.0	6.0	2.5	4.5	4.0	7.0	6.5	6.0	2.5
15	18.0	17.5	10.5	9.5	3.0	2.5	4.0	4.0	7.0	6.0	3.5	2.0
16	18.0	17.0	11.0	10.0	4.0	3.0	4.5	4.0	7.5	6.5	3.5	3.0
17	17.0	16.5	11.5	10.0	4.0	3.5	4.5	4.0	7.5	7.0	3.5	3.0
18	16.5	15.5	10.5	9.5	4.5	4.0	5.0	4.0	---	---	4.0	3.0
19	17.0	16.0	9.5	9.0	---	---	5.5	5.0	---	---	5.5	4.0
20	17.5	17.0	10.0	9.5	---	---	5.5	5.0	---	---	6.0	4.0
21	18.5	17.5	11.0	10.0	---	---	5.0	5.0	---	---	6.0	5.5
22	18.5	18.0	11.0	9.5	---	---	6.0	5.0	8.0	8.0	6.0	5.5
23	19.0	18.0	10.0	9.5	---	---	6.0	6.0	9.0	8.0	6.5	6.5
24	19.5	19.0	11.0	10.0	---	---	6.0	5.5	9.5	8.5	7.0	5.5
25	20.0	19.5	11.0	10.5	---	---	6.5	5.5	10.0	9.5	6.0	5.0
26	20.5	20.0	10.5	8.5	---	---	6.0	1.5	10.0	10.0	5.5	5.0
27	21.0	20.5	8.5	7.5	---	---	2.0	1.5	10.0	8.5	---	---
28	21.0	20.5	7.5	7.0	---	---	2.5	2.0	8.5	8.0	---	---
29	20.5	20.5	8.0	7.0	---	---	3.0	3.0	---	---	---	---
30	20.5	20.0	9.0	7.5	---	---	3.5	3.0	---	---	7.5	6.5
31	20.0	19.5	---	---	---	---	3.5	3.0	---	---	9.0	7.5
MONTH	25.0	15.5	22.5	7.0	8.0	2.5	8.0	1.5	10.0	3.0	9.5	2.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.0	9.5	17.0	17.0	26.0	24.5	29.5	29.0	28.5	28.0	28.5	28.0
2	11.5	10.0	16.5	16.0	26.0	25.5	29.0	24.0	29.5	28.0	29.0	28.0
3	10.0	8.0	17.0	16.0	26.0	25.5	23.0	20.0	29.5	26.0	29.5	28.5
4	11.5	8.5	17.0	17.0	25.0	24.5	22.5	21.0	27.0	25.5	29.5	29.0
5	11.5	10.5	17.0	15.0	24.5	23.5	23.5	22.5	28.0	26.5	29.5	29.0
6	12.0	10.5	15.0	14.5	23.5	23.0	25.0	23.0	28.0	27.5	29.0	28.5
7	12.0	10.5	16.5	15.0	24.0	23.0	27.0	25.0	28.5	28.0	30.0	29.0
8	13.0	11.5	18.0	16.0	23.0	22.5	28.0	27.0	27.5	25.0	31.0	30.0
9	12.0	11.0	18.0	16.0	24.0	23.0	29.0	28.0	27.5	25.5	31.0	30.5
10	12.0	11.0	17.0	16.0	25.0	24.0	29.0	28.0	28.0	25.0	31.0	30.5
11	15.0	12.0	17.5	16.5	26.5	25.0	28.0	27.5	27.0	26.0	31.5	31.0
12	14.0	13.5	19.0	17.0	27.0	26.0	28.5	27.0	28.0	26.5	31.0	26.5
13	16.0	14.0	18.0	16.0	26.5	23.5	27.5	27.0	28.0	27.5	26.5	25.5
14	15.5	14.0	16.0	14.5	23.5	22.5	27.5	25.0	29.0	28.0	26.5	26.0
15	14.5	14.0	15.0	14.5	23.0	22.5	26.0	25.0	30.0	29.0	27.0	26.5
16	14.5	14.0	15.5	14.5	23.5	22.5	27.5	26.0	30.0	29.5	27.5	26.5
17	14.5	14.0	16.0	15.5	25.0	23.5	28.0	27.0	30.0	29.5	28.0	27.0
18	15.0	14.0	17.0	16.0	27.0	25.0	28.5	27.5	31.0	30.0	27.5	26.5
19	14.5	13.5	19.0	17.5	28.0	26.0	28.5	27.5	31.0	28.5	28.0	26.5
20	14.0	10.5	21.0	19.0	26.5	26.0	29.0	28.0	28.5	27.0	30.0	28.0
21	10.5	10.5	20.5	19.0	27.0	26.5	30.5	29.0	28.0	27.0	30.0	29.5
22	10.5	10.0	18.5	17.5	27.5	27.0	---	---	28.5	28.0	30.0	28.5
23	12.5	10.0	19.5	18.0	27.5	27.0	---	---	30.0	28.5	28.5	27.5
24	12.5	11.5	19.5	16.5	27.5	27.0	---	---	30.0	29.5	27.0	26.5
25	14.0	12.0	19.5	18.0	27.5	27.0	28.0	26.5	30.5	30.0	26.5	26.0
26	15.0	13.0	21.5	19.5	27.0	22.0	29.0	27.5	31.0	30.0	26.5	26.0
27	15.5	14.0	23.0	21.5	25.0	22.5	29.5	28.5	30.5	30.0	26.0	26.0
28	16.5	15.0	24.5	22.5	27.5	25.0	29.0	27.5	30.5	30.5	26.0	25.5
29	17.5	16.5	25.5	23.5	29.0	27.5	28.5	27.0	30.5	29.5	25.5	25.0
30	17.5	16.5	25.5	24.5	30.0	28.5	28.0	27.5	29.5	29.0	25.0	24.5
31	---	---	24.5	24.0	---	---	28.5	27.5	29.5	28.0	---	---
MONTH	17.5	8.0	25.5	14.5	30.0	22.0	30.5	20.0	31.0	25.0	31.5	24.5
YEAR	31.5	1.5										

04208506 CUYAHOGA RIVER AT WEST THIRD STREET BRIDGE, IN CLEVELAND, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	2.6	2.0	9.8	7.6	---	---	---	---	10.0	9.0
2	---	---	3.0	2.1	10.1	9.6	---	---	10.7	10.3	9.4	8.8
3	3.2	2.9	2.7	2.0	10.3	9.5	---	---	10.6	10.1	9.6	9.0
4	3.5	2.8	3.1	2.5	10.3	9.1	10.5	10.1	10.6	10.3	9.6	8.9
5	4.1	2.8	3.1	1.7	---	---	10.8	9.8	10.6	10.1	9.4	8.9
6	3.8	3.2	2.2	1.1	---	---	10.5	9.7	10.8	10.2	9.5	8.8
7	3.5	2.7	3.3	.1	11.6	11.1	10.0	9.0	10.7	10.3	9.5	8.7
8	3.6	2.7	3.3	1.8	11.6	10.4	11.0	7.3	10.7	10.2	9.4	8.5
9	4.0	1.9	4.0	3.1	11.4	10.7	11.4	11.2	10.5	9.7	8.9	8.0
10	4.4	3.8	4.7	1.0	11.6	11.0	11.6	11.2	9.9	9.1	9.0	6.2
11	5.2	4.4	5.9	2.4	11.6	10.5	11.5	11.4	9.6	9.0	9.0	6.4
12	5.1	3.2	7.5	6.1	11.6	11.0	11.4	10.9	9.6	9.1	9.3	7.3
13	4.5	3.5	8.0	6.3	11.4	8.5	11.4	10.9	9.7	9.0	10.6	9.1
14	4.7	4.2	7.6	6.3	11.4	9.0	11.3	11.1	9.6	9.0	11.1	8.8
15	4.8	4.3	8.0	7.0	11.6	11.2	11.2	11.0	9.7	9.2	11.5	11.1
16	4.7	4.1	8.2	5.8	11.7	11.1	11.2	11.0	9.6	9.2	11.7	11.3
17	4.4	3.7	7.7	6.1	11.3	10.6	11.2	11.0	10.4	9.3	11.6	11.5
18	5.5	4.4	8.6	6.6	11.0	10.6	11.1	10.5	---	---	11.7	11.4
19	5.2	4.4	8.9	8.0	---	---	10.7	10.0	---	---	11.4	10.9
20	5.4	3.3	8.8	7.5	---	---	10.7	10.1	---	---	11.5	10.8
21	3.7	2.6	8.8	7.4	---	---	10.5	10.1	---	---	11.2	10.5
22	4.6	3.4	8.8	8.2	---	---	10.5	10.0	11.7	11.5	10.9	10.7
23	3.9	3.2	8.7	7.1	---	---	10.4	9.9	12.2	11.0	10.9	10.6
24	3.2	2.4	8.3	7.8	---	---	10.4	9.6	11.4	10.9	11.2	10.8
25	3.4	2.9	8.6	8.1	---	---	10.3	7.8	10.9	10.1	11.2	11.0
26	3.3	2.4	8.6	6.2	---	---	10.8	8.7	10.0	9.5	11.1	10.6
27	2.6	1.7	---	---	---	---	11.3	10.9	10.8	9.3	---	---
28	2.3	1.4	---	---	---	---	11.1	10.8	9.7	9.4	---	---
29	2.2	1.4	8.7	7.0	---	---	11.1	10.7	---	---	---	---
30	2.4	1.8	9.5	7.0	---	---	11.4	10.8	---	---	10.5	10.3
31	2.4	1.8	---	---	---	---	11.2	10.5	---	---	10.2	9.0
MONTH	5.5	1.4	9.5	.1	11.7	7.6	11.6	7.3	12.2	9.0	11.7	6.2

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.5	9.1	6.0	4.6	3.1	.9	.3	.2	1.0	.1	1.0	.2
2	9.1	8.7	5.6	4.4	1.3	.0	1.5	.2	.5	.1	.3	.1
3	9.8	8.5	5.6	4.9	.3	.0	5.0	.3	.2	.1	.5	.1
4	9.7	8.2	4.9	3.9	.1	.0	5.2	2.5	1.0	.1	.8	.1
5	9.0	8.0	5.0	3.3	.4	.0	2.8	1.0	1.0	.1	.9	.3
6	9.0	8.3	5.2	1.2	1.7	.0	2.2	.3	.1	.1	.4	.1
7	9.1	8.4	5.4	4.1	1.3	.0	.5	.1	.2	.1	.7	.1
8	8.8	8.4	5.5	3.5	.4	.0	.3	.1	1.0	.0	.4	.1
9	8.9	8.6	5.0	1.1	.1	.0	.2	.1	1.4	.2	.4	.1
10	9.0	8.6	5.2	4.1	.2	.0	.5	.1	4.2	.2	.5	.1
11	8.7	6.3	5.2	3.3	1.1	.1	.2	.1	4.3	1.4	.5	.0
12	8.0	5.7	5.4	4.4	.3	.0	1.2	.1	3.1	1.0	.1	.0
13	7.9	6.8	5.5	1.8	.2	.0	.2	.1	2.5	.3	.4	.0
14	7.4	7.1	6.6	4.2	.2	.0	.3	.1	2.6	.7	.3	.1
15	7.6	6.9	7.4	6.4	.5	.0	.5	.1	.7	.1	.2	.1
16	7.7	6.9	7.2	6.0	.9	.3	1.2	.1	.4	.1	1.0	.1
17	7.3	6.1	6.9	4.7	.8	.4	.2	.1	.4	.1	.6	.1
18	7.5	6.2	6.5	5.0	.6	.1	.3	.1	.2	.1	.7	.1
19	7.3	4.6	6.0	4.4	.6	.0	.4	.1	1.3	.1	.5	.1
20	8.0	5.0	5.6	3.5	.3	.0	.3	.1	.4	.0	.2	.1
21	8.6	8.1	5.2	1.6	.1	.0	.7	.1	.2	.0	.2	.1
22	8.9	8.5	5.8	2.8	.2	.0	---	---	.3	.1	.1	.0
23	8.9	7.8	5.5	3.6	.1	.0	---	---	.4	.0	.3	.0
24	8.5	7.7	8.1	4.2	.3	.0	---	---	.3	.0	.7	.0
25	8.3	7.8	7.6	6.9	.2	.0	.5	.2	.4	.0	.2	.0
26	8.0	7.2	7.6	3.5	.9	.0	.3	.2	.5	.0	.3	.0
27	7.7	6.0	5.8	.0	1.0	.4	.6	.1	.3	.0	.6	.0
28	6.5	5.0	6.1	2.2	1.4	.2	.3	.1	.2	.0	.5	.0
29	6.7	4.9	5.0	.1	.6	.3	.2	.1	.1	.0	.3	.0
30	6.7	5.7	5.3	1.0	1.2	.3	.3	.1	.1	.0	.7	.0
31	---	---	2.6	.0	---	---	.4	.0	.7	.0	---	---
MONTH	9.8	4.6	8.1	.0	3.1	.0	5.2	.0	4.3	.0	1.0	.0
YEAR	12.2	.0										

04208690 EUCLID CREEK NEAR EUCLID, OH

LOCATION.--Lat 41°34'28", long 81°32'51', Cuyahoga County, Hydrologic Unit 04110003, on right bank 150 ft (46 m) upstream from St. Clair Avenue bridge, 0.3 mi (0.5 km) downstream from city of Cleveland waterworks, 1.6 mi (2.6 km) upstream from mouth.

DRAINAGE AREA.--22.6 mi^2 (58.5 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is 600.26 ft (184.236 m) National Geodetic Vertical Datum of 1929, city of Cleveland bench mark.

REMARKS.--Records poor. Diurnal fluctuations caused by waterplant upstream from gage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,910 ft^3/s (82.4 m^3/s) Dec. 14, 1977, gage height, 8.03 ft (2.448 m) from rating curve extended above 1,500 ft^3/s (42.5 m^3/s) on basis of contracted-opening measurement of peak flow and a slope area measurement at a lower stage; minimum daily discharge 3.1 ft^3/s (0.088 m^3/s) July 10, 11, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of August 31, 1975 reached a stage of 15.06 ft (4.590 m), from floodmarks, discharge, 7.440 ft^3/s (211 m^3/s) on basis of contracted-opening measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft^3/s (42.5 m^3/s) and maximums (*):

		Discharge		Gage height				Discharge		Gage height	
Date	Time	(ft^3/s)	(m^3/s)	(ft)	(m)	Date	Time	(ft^3/s)	(m^3/s)	(ft)	(m)
Dec. 14	0530	*2910	82.4	*8.03	2.448	Aug. 19	1815	1920	54.4	6.10	1.859
Mar. 14	1200	2000	56.6	6.34	1.932	Sept. 18	0045	2350	66.6	6.88	2.097
Apr. 19	2000	1550	43.9	5.44	1.658						

Minimum daily discharge, 6.9 ft^3/s (0.195 m^3/s) July 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	13	100	13	30	17	20	13	12	8.7	7.2	16
2	58	15	40	13	28	17	17	13	11	34	7.9	15
3	34	13	34	13	26	17	110	13	9.9	20	201	16
4	26	15	30	13	24	17	172	12	9.5	11	20	16
5	24	15	36	14	22	17	105	19	15	11	15	16
6	34	13	70	16	21	17	52	16	17	11	16	16
7	25	103	44	20	20	17	43	14	63	9.9	22	16
8	55	23	36	620	19	20	23	24	23	10	22	15
9	82	16	32	130	19	40	18	30	12	10	33	16
10	45	116	30	80	18	80	19	16	11	12	25	15
11	27	27	30	30	18	162	41	16	9.9	10	16	15
12	27	48	30	22	18	256	24	54	26	9.1	14	44
13	23	30	166	18	18	293	18	76	20	11	14	18
14	24	22	1510	17	18	1400	17	42	14	12	14	22
15	22	49	129	17	18	362	16	52	10	10	15	26
16	40	116	67	17	18	125	15	30	9.5	10	14	17
17	47	206	100	16	18	49	15	27	9.0	9.9	13	117
18	27	60	103	16	17	30	21	22	8.3	11	12	356
19	23	24	63	16	17	63	269	17	22	9.9	240	21
20	23	20	64	16	17	58	300	48	8.7	9.5	40	11
21	18	44	40	16	17	236	60	40	10	14	18	10
22	19	24	30	16	17	52	34	17	9.1	9.1	16	10
23	18	17	25	17	17	29	24	15	7.2	18	16	10
24	18	20	34	19	17	21	21	72	8.3	12	16	9.5
25	17	34	90	100	17	28	19	20	7.9	12	16	9.5
26	21	30	30	400	17	70	16	14	87	9.1	16	9.0
27	18	24	18	150	17	135	18	12	13	16	15	9.0
28	18	22	16	80	17	36	18	12	9.1	12	17	9.0
29	14	20	15	55	---	25	15	11	8.3	13	16	9.0
30	14	190	14	44	---	21	16	17	9.5	10	19	9.0
31	15	---	13	34	---	21	---	14	---	6.9	21	---
TOTAL	904	1369	3039	2048	540	3731	1556	798	490.2	372.1	947.1	898.0
MEAN	29.2	45.6	98.0	66.1	19.3	120	51.9	25.7	16.3	12.0	30.6	29.9
MAX	82	206	1510	620	30	1400	300	76	87	34	240	356
MIN	14	13	13	13	17	17	15	11	7.2	6.9	7.2	9.0
CFSM	1.29	2.02	4.34	2.93	.85	5.31	2.30	1.14	.72	.53	1.35	1.32
IN.	1.49	2.25	5.00	3.37	.89	6.14	2.56	1.31	.81	.61	1.56	1.48

WTR YR 1978 TOTAL 16692.4 MEAN 45.7 MAX 1510 MIN 6.9 CFSM 2.02 IN 27.47

04208690 EUCLID CREEK NEAR EUCLID, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May to August 1978 (discontinued).

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: July 1977 to September 1978 (discontinued).

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1900 mg/L Dec. 14; minimum daily mean, 3 mg/L July 13, Sept. 9.
SEDIMENT LOADS Maximum daily, 9,380 tons (8,510 tonnes) Dec. 14; minimum daily 0.09 ton (0.08 tonnes) July 13.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM-FLOW (CFS)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
NOV									
17...	1245	165	165	355	7.5	4.0	10.0	9.9	88
DEC									
14...	1030	1780	1780	395	7.3	7.0	3.0	12.6	93
MAR									
15...	1530	151	151	665	7.4	4.0	3.5	12.4	93
APR									
19...	0915	68	68	660	7.7	4.5	9.5	13.1	110
20...	1650	198	198	365	7.3	4.0	8.0	11.8	99
21...	0815	73	73	522	7.5	2.0	6.5	12.4	100
JUN									
07...	1500	95	95	500	7.5	22.0	18.0	9.5	100
07...	1805	284	284	315	7.5	22.0	20.0	9.1	99
07...	1935	309	309	405	7.4	21.0	19.0	8.8	94
AUG									
07...	2050	113	113	315	7.7	21.0	23.0	8.0	92
07...	2110	58	58	275	7.1	21.0	23.0	8.1	93

DATE	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)
NOV									
17...	36	33	8.4	227	71	298	1.0	.04	.19
DEC									
14...	65	77	3.3	223	1010	1240	1.0	.18	.52
MAR									
15...	20	270	6.6	412	24	436	1.9	.26	.10
APR									
19...	30	110	2.5	372	77	449	.85	.26	.24
20...	35	41	6.7	198	125	323	1.1	.18	.21
21...	20	69	7.6	304	44	348	1.4	.15	.12
JUN									
07...	75	64	4.4	306	173	479	1.5	.36	.69
07...	170	39	2.7	201	700	901	.75	.45	.93
07...	150	51	4.4	247	1150	1400	1.2	.20	1.7
AUG									
07...	170	43	1.9	208	691	899	.98	1.3	.67
07...	92	33	1.4	172	280	452	.77	.74	.37

DATE	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	ARSENIC TOTAL (UG/L AS AS)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)
NOV								
17...	.03	.09	1	1	<10	9	21	<.5
DEC								
14...	.01	.03	2	0	30	32	46	<.5
MAR								
15...	.00	.00	1	4	<10	8	25	<.5
APR								
19...	.03	.09	2	--	50	--	--	<.5
20...	.04	.12	2	1	10	11	14	<.5
21...	.02	.06	2	0	<10	9	8	<.5
JUN								
07...	.00	.00	6	0	10	30	49	<.5
07...	.03	.09	15	3	40	100	400	<.5
07...	.12	.37	7	0	30	90	130	<.5
AUG								
07...	.05	.15	6	2	50	80	190	3.9
07...	.00	.00	7	1	20	52	100	3.6

04208690 EUCLID CREEK NEAR EUCLID, OH--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
DEC							
14...	1600	1570	193	818	51	58	69
MAR							
14...	1640	1640	1060	4780	26	34	47
APR							
19...	1945	1600	2960	12800	28	40	56

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM
DEC							
14...	82	98	96	100	--	--	--
MAR							
14...	64	77	85	89	94	99	100
APR							
19...	76	90	98	100	--	--	--

04208690 EUCLID CREEK NEAR EUCLID, OH--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	77	16	17	.60	100	27	25	.88	10	.81	17	.78
2	30	4.7	7	.28	28	3.0	25	.88	10	.76	18	.83
3	13	1.2	5	.18	23	2.1	30	1.1	10	.70	19	.87
4	5	.35	20	.81	22	1.8	40	1.4	10	.65	13	.60
5	7	.45	13	.53	21	2.0	40	1.5	10	.59	13	.60
6	9	.83	10	.35	20	3.8	40	1.7	10	.57	28	1.3
7	6	.41	186	134	20	2.4	50	2.7	10	.54	72	3.3
8	85	13	124	7.7	20	1.9	200	335	10	.51	42	2.3
9	85	19	48	2.1	20	1.7	100	35	10	.51	32	3.5
10	94	23	122	69	20	1.6	50	11	10	.49	37	8.0
11	18	1.3	28	2.0	20	1.6	20	1.6	10	.49	28	12
12	16	1.2	11	1.4	20	1.6	10	.59	10	.49	52	36
13	13	.81	8	.65	370	482	10	.49	10	.49	360	285
14	14	.91	8	.48	1900	9380	10	.46	10	.49	961	4120
15	15	.89	63	8.3	200	70	10	.46	10	.49	223	218
16	97	10	92	29	75	14	10	.46	32	1.6	63	21
17	45	5.7	123	68	40	11	10	.43	23	1.1	36	4.8
18	25	1.8	28	4.5	30	8.3	10	.43	17	.78	28	2.3
19	17	1.1	23	1.5	20	3.4	10	.43	14	.64	13	2.2
20	52	3.2	18	.97	20	3.5	10	.43	17	.78	19	3.0
21	30	1.5	13	1.5	20	2.2	10	.43	16	.73	227	209
22	26	1.3	11	.71	20	1.6	10	.43	45	2.1	116	16
23	20	.97	10	.46	20	1.4	10	.46	28	1.3	129	10
24	14	.68	9	.49	30	2.8	10	.51	48	2.2	55	3.1
25	13	.60	9	.83	50	12	10	2.7	103	4.7	46	3.5
26	13	.74	9	.73	40	3.2	10	11	33	1.5	144	27
27	12	.58	10	.65	30	1.5	10	4.1	23	1.1	222	81
28	11	.53	73	4.3	20	.86	10	2.2	27	1.2	57	5.5
29	10	.38	20	1.1	50	2.0	10	1.5	---	---	24	1.6
30	10	.38	250	128	20	.76	10	1.2	---	---	17	.96
31	10	.41	---	---	20	.70	10	.92	---	---	17	.96
TOTAL	---	113.92	---	471.12	---	10051.72	---	422.39	---	28.31	---	5085.00

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	14	.76	24	.84	20	.65	18	.42	15	.29	13	.56
2	13	.60	43	1.5	24	.71	72	15	23	.49	7	.28
3	143	42	45	1.6	34	.91	45	2.4	816	888	8	.35
4	422	430	15	.49	55	1.4	15	.45	20	1.1	8	.35
5	214	128	15	.77	45	1.8	40	1.2	20	.81	6	.26
6	18	2.5	12	.52	78	3.6	20	.59	19	.82	8	.35
7	18	2.1	18	.68	335	136	7	.19	45	2.7	7	.30
8	23	1.4	76	9.1	102	6.3	7	.19	15	.89	4	.16
9	45	2.2	21	1.7	20	.65	10	.27	81	7.2	3	.13
10	20	1.0	9	.39	82	2.4	8	.26	58	3.9	9	.36
11	43	4.8	10	.43	100	2.7	8	.22	8	.35	7	.28
12	37	2.4	129	29	263	29	6	.15	6	.23	45	5.3
13	55	2.7	102	26	78	4.2	3	.09	14	.53	15	.73
14	27	1.2	53	6.0	33	1.2	12	.39	53	2.0	62	3.7
15	9	.39	48	6.7	22	.59	20	.54	18	.73	50	3.5
16	13	.53	33	2.7	12	.31	67	1.8	23	.87	95	4.4
17	20	.81	46	3.4	35	.85	35	.94	34	1.2	378	119
18	45	2.6	42	2.5	12	.27	11	.33	43	1.4	805	774
19	682	1480	28	1.3	72	4.3	22	.59	550	1340	18	1.0
20	400	324	17	2.2	53	1.2	14	.36	69	7.5	19	.56
21	53	8.6	54	5.8	53	1.4	12	.45	20	.97	20	.54
22	30	2.8	24	1.1	18	.44	22	.54	12	.52	13	.35
23	85	5.5	28	1.1	42	.82	50	2.4	13	.56	12	.32
24	32	1.8	131	25	33	.74	67	1.5	27	1.2	46	1.2
25	13	.67	13	.70	13	.28	215	11	18	.78	28	.72
26	44	1.9	15	.57	339	80	100	2.5	10	.43	14	.34
27	138	6.7	15	.49	60	2.1	109	4.7	73	3.0	13	.32
28	100	4.9	10	.32	43	1.1	73	2.4	38	1.7	9	.22
29	20	.81	25	.74	18	.40	85	3.0	10	.43	7	.17
30	17	.73	65	3.0	60	1.5	72	1.9	13	.67	9	.22
31	---	---	36	1.4	---	---	41	.76	16	.91	---	---
TOTAL	---	2464.40	---	138.04	---	287.82	---	57.53	---	2272.18	---	919.97

TOTAL LOAD FOR YEAR: 22312.40 TONS.

04209000 CHAGRIN RIVER AT WILLOUGHBY, OH

LOCATION.--Lat 41°37'51", long 81°24'13", in T.9 N., R.10 W., Lake County, Hydrologic Unit 04110003, on left bank, 150 ft (46 m) downstream from city waterworks dam, 800 ft (244 m) downstream from East Branch, 1.0 mi (1.6 km) southeast of Willoughby, and 5.0 mi (8.0 km) upstream from mouth.

DRAINAGE AREA.--246 mi^2 (637 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1925 to November 1935, October 1939 to current year (July 1925 to September 1932 monthly run-off in inches, adjusted for diversion, published in WSP 1307; previously published run-off was unadjusted and should not be used).

REVISED RECORDS.--WSP 1084: 1929(M), 1931(M). WSP 1307: 1926-28(M), 1930(M), 1932-35(M), 1942(M). WSP 1912: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 594.57 ft (181.225 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 20, 1939, nonrecording gage at site 150 ft (46 m) upstream at datum 7 ft (2 m) higher.

REMARKS.--Records good except those for winter periods, which are poor. Water diverted 200 ft (61 m) upstream from station for municipal supply of city of Willoughby. Water-quality data collected at this site 1965 to 1977.

AVERAGE DISCHARGE.--49 years, 327 ft^3/s (9.261 m^3/s), 18.06 in/yr (459 mm/yr), adjusted for diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,000 ft^3/s (793 m^3/s) Mar. 22, 1948, gage height, 17.95 ft (5.471 m) (from high-water mark in well), from rating curve extended above 14,000 ft^3/s (393 m^3/s) on basis of contracted-opening measurements of peak flow; minimum daily, 3.0 ft^3/s (0.085 m^3/s) July 25, 1934.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 10.3 ft (3.14 m), from floodmark, former site and datum, discharge, 24,500 ft^3/s (694 m^3/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 ft^3/s (113 m^3/s) and maximums (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 14	1100	*10600	300	*12.24	3.731	Mar. 21	1730	5070	144	8.08	2.463
Jan. 8	1730	5200	147	8.20	2.499	Sept. 18	0330	4380	124	7.43	2.265
Mar. 14	2100	7090	201	9.80	2.987						

Minimum daily discharge, 39 ft^3/s (1.10 m^3/s) Sept. 8-11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	214	117	2630	320	350	150	155	175	167	94	74	59
2	325	114	1110	310	320	150	119	175	144	116	71	49
3	265	111	680	300	290	150	628	167	136	251	472	49
4	206	120	482	290	270	150	1240	159	126	171	256	47
5	172	133	395	280	250	150	2420	206	119	123	119	43
6	164	124	752	280	240	150	1020	233	106	103	88	41
7	140	536	596	290	230	150	1200	211	197	100	83	41
8	210	450	450	3830	220	150	708	224	211	94	163	39
9	566	248	400	2060	210	150	517	667	126	94	140	39
10	395	884	380	700	200	250	452	485	106	86	220	39
11	248	824	360	600	200	400	524	295	94	83	140	39
12	214	512	360	500	190	600	654	392	106	83	94	88
13	190	548	800	450	190	1500	465	939	211	80	71	103
14	179	542	7500	400	180	4700	350	1050	126	80	64	64
15	182	680	5440	350	180	3740	280	911	100	80	61	100
16	275	1510	2150	320	170	1540	230	848	94	88	54	64
17	584	2060	1610	290	170	841	200	608	91	119	49	97
18	310	1010	1910	270	170	433	180	537	91	106	47	1400
19	214	656	1670	250	160	715	834	387	215	80	197	325
20	194	455	1320	230	160	1090	2570	355	133	69	556	159
21	168	405	1150	220	160	2920	1050	792	116	71	133	110
22	154	350	715	210	160	1690	641	409	106	71	80	86
23	140	285	524	210	160	799	420	295	126	71	61	71
24	133	270	452	250	150	426	365	1340	106	106	54	71
25	130	252	1690	700	150	260	310	757	116	86	49	66
26	130	315	680	1000	150	472	265	392	426	83	49	61
27	130	290	433	700	150	2210	233	280	238	94	51	56
28	127	295	370	550	150	694	215	224	140	104	51	56
29	120	275	360	450	---	350	211	197	110	113	51	56
30	117	758	350	420	---	215	193	175	97	100	61	56
31	117	---	330	390	---	163	---	202	---	83	71	---
TOTAL	6733	15129	38049	17420	5580	27358	18649	14087	4280	3162	3730	3574
MEAN	217	504	1227	562	199	883	622	454	143	102	120	119
MAX	584	2060	7500	3830	350	4700	2570	1340	426	251	556	1400
MIN	117	111	330	210	150	150	119	159	91	69	47	39
MEAN+	220	507	1230	565	202	885	625	457	146	105	123	122
CFSM+	0.89	2.06	5.00	2.30	0.82	3.60	2.54	1.86	0.59	0.43	0.50	0.50
IN.+	1.03	2.30	5.76	2.65	0.85	4.15	2.83	2.14	0.66	0.49	0.58	0.55

CAL YR 1977 TOTAL 161085 MEAN 441 MAX 7500 MIN 70 MEAN+ 445 CFSM+ 181 IN+ 24.53
WTR YR 1978 TOTAL 157751 MEAN 432 MAX 7500 MIN 39 MEAN+ 435 CFSM+ 177 IN+ 24.01

+ Adjusted for municipal supply diversion of city of Willoughby.

04209000 CHAGRIN RIVER AT WILLOUGHBY, OH--Continued

WATER-QUALITY RECORDS

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
MAR 21...	1400	3670	1530	15200	18	23	34
APR 20...	0950	2580	892	6210	26	35	46
MAY 24...	0900	1300	1620	5690	33	44	58
SEP 18...	0400	3790	4720	48300	25	37	53

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM
MAR 21...	48	64	80	87	98	100	--
APR 20...	59	72	81	89	98	100	--
MAY 24...	75	88	97	99	100	--	--
SEP 18...	72	88	91	94	96	97	100

04209000 CHAGRIN RIVER AT WILLOUGHBY, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1969 to current year.

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	3	.95	698	4960	10	8.6	7	6.6	---	---
2	---	---	3	.92	---	---	10	8.4	7	6.0	---	---
3	---	---	3	.90	---	---	10	8.1	---	---	---	---
4	---	---	3	.97	---	---	10	7.8	---	---	---	---
5	11	5.1	3	1.1	---	---	10	7.6	---	---	---	---
6	10	4.4	3	1.0	78	158	10	7.6	---	---	---	---
7	10	3.8	215	435	22	35	---	---	---	---	---	---
8	10	5.7	83	101	---	---	---	---	---	---	13	5.3
9	---	---	24	16	---	---	---	---	---	---	13	5.3
10	73	78	16	38	---	---	---	---	---	---	13	8.8
11	30	20	17	38	---	---	32	52	---	---	15	16
12	19	11	14	19	---	---	25	34	---	---	15	24
13	14	7.2	12	18	---	---	20	24	---	---	15	61
14	12	5.8	10	15	---	---	16	17	---	---	822	10400
15	11	5.4	---	---	---	---	12	11	---	---	510	5150
16	10	7.4	270	1100	---	---	9	7.8	---	---	210	873
17	129	205	490	2920	---	---	9	7.0	---	---	---	---
18	25	21	114	311	---	---	9	6.6	---	---	---	---
19	15	8.7	---	---	---	---	9	6.1	---	---	---	---
20	11	5.8	---	---	128	456	10	6.2	---	---	510	1500
21	7	3.2	---	---	---	---	10	5.9	---	---	1200	11800
22	6	2.5	---	---	---	---	10	5.7	---	---	500	2200
23	5	1.9	---	---	---	---	10	5.7	---	---	170	367
24	5	1.8	---	---	---	---	15	10	---	---	80	92
25	5	1.8	---	---	---	---	15	28	---	---	65	46
26	4	1.4	---	---	---	---	---	---	---	---	45	57
27	4	1.4	---	---	---	---	---	---	---	---	820	6400
28	4	1.4	---	---	---	---	10	15	---	---	280	525
29	3	.97	---	---	---	---	9	11	---	---	77	73
30	3	.95	262	978	12	11	8	9.1	---	---	43	25
31	3	.95	---	---	10	8.9	8	8.4	---	---	32	14
TOTAL	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	811	5590	4	1.9	---	---	---	---	18	3.6	31	4.9
2	21	6.7	4	1.9	---	---	---	---	17	3.3	29	3.8
3	---	---	4	1.8	---	---	---	---	560	767	27	3.6
4	---	---	3	1.3	---	---	60	28	175	121	25	3.2
5	---	---	3	1.7	8	2.6	24	8.0	49	16	23	2.7
6	160	441	3	1.9	4	1.1	20	5.6	37	8.8	22	2.4
7	210	680	3	1.7	35	19	24	6.5	25	5.6	22	2.4
8	123	235	3	1.8	84	48	25	6.3	45	20	22	2.3
9	28	39	48	86	10	3.4	25	6.3	55	21	22	2.3
10	20	24	12	16	7	2.0	24	5.6	145	86	21	2.2
11	20	28	---	---	7	1.8	23	5.2	---	---	21	2.2
12	19	34	---	---	12	3.4	23	5.2	---	---	80	19
13	18	23	---	---	78	44	25	5.4	---	---	49	14
14	9	8.5	---	---	45	15	30	6.5	27	4.7	31	5.4
15	7	5.3	58	143	35	9.5	32	6.9	28	4.6	34	9.2
16	5	3.1	55	126	---	---	33	7.8	35	5.1	35	6.0
17	3	1.6	38	62	---	---	33	11	---	---	187	165
18	2	.97	15	22	---	---	33	9.4	---	---	1530	7590
19	---	---	13	14	313	213	33	7.1	---	---	183	161
20	783	4900	14	13	58	21	33	6.1	---	---	85	36
21	170	482	15	32	37	12	---	---	130	47	43	13
22	45	78	15	17	36	10	---	---	78	17	27	6.3
23	20	23	15	12	25	8.5	---	---	52	8.6	17	3.3
24	12	12	783	3180	18	5.2	---	---	48	7.0	12	2.3
25	10	8.4	---	---	18	5.6	---	---	40	5.3	10	1.8
26	10	7.2	---	---	---	---	---	---	40	5.3	---	---
27	10	6.3	---	---	58	37	---	---	40	5.5	---	---
28	5	2.9	---	---	32	12	---	---	39	5.4	---	---
29	5	2.8	---	---	---	---	---	---	38	5.2	---	---
30	5	2.6	---	---	---	---	---	---	36	5.9	---	---
31	---	---	---	---	---	---	18	4.0	33	6.3	---	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	---

04212100 GRAND RIVER NEAR PAINESVILLE, OH

LOCATION.--Lat 41°43'08", long 81°13'41", Lake County, Hydrologic Unit 04110004, on downstream left abutment of bridge on State Highway 84 (Walnut Avenue), 0.9 mi (1.4 km) downstream from Big Creek in Painesville.

DRAINAGE AREA.--685 mi² (1,774 km²).

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 620.37 ft (189.089 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter periods, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,700 ft³/s (445 m³/s) Feb. 17, 1976, gage height, 12.55 ft (3.825 m); minimum, 11 ft³/s (0.31 m³/s) Sept. 14, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 6,500 ft³/s (184 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Nov. 17	0730	8390	238	8.77	2.673	Mar. 15	1230	unknown	--	*12.52	3.816
Dec. 15	2300	*13200	374	11.30	3.444	Mar. 21	1800	11600	329	10.47	3.191
Jan. 8	2000	7740	219	8.41	2.563						

Minimum discharge, 11 ft³/s (0.31 m³/s) Sept. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	302	89	4340	800	700	250	1300	149	242	44	25	19
2	747	89	4570	700	600	250	990	130	197	47	24	17
3	988	95	2880	650	550	250	1390	115	165	59	108	21
4	950	110	2080	650	500	250	3340	119	142	47	167	26
5	646	103	1730	600	480	250	5420	147	126	59	82	23
6	432	92	1580	1000	460	250	4400	207	102	87	47	20
7	317	151	1400	1880	440	250	3480	242	90	94	36	18
8	354	342	1290	5550	420	300	2400	274	121	78	34	17
9	1570	566	1200	3500	400	400	1650	518	108	63	31	15
10	3120	1560	1100	2000	380	500	1170	669	92	52	36	14
11	1900	3300	1000	1500	360	700	950	725	70	44	36	12
12	981	3100	1100	1100	350	1000	788	725	66	38	119	13
13	618	2550	5700	950	340	1500	690	823	96	34	123	16
14	430	2290	8000	850	330	4500	554	1570	78	32	85	12
15	318	2530	12400	750	320	9000	450	2660	66	28	60	26
16	437	5870	11400	700	310	8000	373	3190	66	24	44	25
17	405	7320	7780	650	300	7000	306	2510	69	22	35	39
18	300	6320	7500	600	290	6500	286	3530	59	22	30	177
19	254	5380	7890	550	280	6400	298	2580	73	22	31	70
20	373	3880	6980	500	270	6700	854	1600	87	21	52	48
21	297	2790	5610	470	260	9670	1530	1540	104	19	32	67
22	248	2080	3930	440	260	8550	1540	1230	90	19	53	54
23	210	1410	2490	430	250	6590	1040	809	83	19	94	40
24	187	986	1750	500	250	4580	739	795	67	19	66	32
25	162	786	3070	1000	250	3220	554	590	56	17	46	26
26	145	740	3030	2000	250	2890	430	572	82	19	35	23
27	130	700	1890	1600	250	5040	341	578	73	24	28	26
28	116	680	1500	1300	250	4180	274	435	59	21	24	44
29	105	660	1200	1000	---	2870	242	308	54	23	21	29
30	98	1090	1000	900	---	2210	200	259	45	32	20	22
31	94	---	900	800	---	1720	---	382	---	29	21	---
TOTAL	17234	57659	118290	35920	10100	105770	37979	29981	2828	1158	1645	991
MEAN	556	1922	3816	1159	361	3412	1266	967	94.3	37.4	53.1	33.0
MAX	3120	7320	12400	5550	700	9670	5420	3530	242	94	167	177
MIN	94	89	900	430	250	250	200	115	45	17	20	12
CFSM	.81	2.81	5.57	1.69	.53	4.98	1.85	1.41	.14	.06	.08	.05
IN.	.94	3.13	6.42	1.95	.55	5.74	2.06	1.63	.15	.06	.09	.05

CAL YR 1977 TOTAL 459533 MEAN 1259 MAX 12400 MIN 30 CFSM 1.84 IN 24.96
WTR YR 1978 TOTAL 419555 MEAN 1149 MAX 12400 MIN 12 CFSM 1.68 IN 22.78

04212100 GRAND RIVER NEAR PAINESVILLE, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1977 to May 1978 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAMFLOW (CFS)	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, AIR (DEG C)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
NOV									
17...	1430	7140	7140	200	7.4	6.0	9.0	10.4	98
18...	0830	6090	6090	200	7.3	4.0	6.5	10.6	86
DEC									
14...	0900	10900	10900	235	7.5	7.0	1.0	13.1	92
MAR									
15...	1630	13000	13000	215	7.0	4.0	4.0	12.4	95
16...	0845	11400	11400	225	7.0	5.0	2.0	12.4	90
29...	1515	2670	2670	210	7.4	1.0	4.5	12.8	98
30...	0745	2270	2270	215	7.4	-2.0	2.0	12.8	93
APR									
20...	1830	1410	1410	320	7.9	3.0	8.0	11.6	97
MAY									
16...	1600	3040	3040	260	7.7	17.0	16.0	10.2	100
17...	0900	2370	2370	240	7.6	13.0	14.0	9.8	94

DATE	OXYGEN DEMAND, CHEMICAL (LOW LEVEL) (MG/L)	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
NOV									
17...	30	15	5.6	145	160	305	.33	.02	.11
18...	27	15	5.5	125	97	222	.33	.04	.09
DEC									
14...	72	34	3.3	129	1210	1340	.63	.06	.50
MAR									
15...	30	26	4.1	137	219	356	1.2	.31	.13
16...	30	26	4.1	153	78	231	.92	.17	.08
29...	15	18	5.0	133	54	187	.56	.06	.08
30...	20	19	5.1	138	44	182	.59	.11	.07
APR									
20...	25	30	3.3	159	126	285	.27	.04	.08
MAY									
16...	30	27	3.6	168	93	261	.26	.05	.08
17...	30	22	3.4	165	66	231	.27	.03	.07

DATE	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)	ARSENIC TOTAL (UG/L AS AS)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)
NOV								
17...	.02	.06	1	1	<10	6	13	<.5
18...	.00	.00	1	1	<10	6	13	<.5
DEC								
14...	.01	.03	2	0	<10	34	28	<.5
MAR								
15...	.00	.00	1	1	<10	14	6	<.5
16...	.06	.18	0	1	<10	9	4	<.5
29...	.01	.03	1	--	--	--	--	<.5
30...	.03	.09	1	0	10	6	1	<.5
APR								
20...	.03	.09	2	0	10	12	7	<.5
MAY								
16...	.03	.09	1	0	<10	5	4	<.5
17...	.00	.00	1	1	10	5	21	<.5

04212200 GRAND RIVER AT PAINESVILLE, OH
(National stream-quality accounting network station)

LOCATION.--Lat 41°44'09", long 81°15'59", in T.11 N., R.8 W., Lake County, Hydrologic Unit 04110004, at bridge on State Highway 535 in Painesville, 2.2 mi (3.5 km) upstream from mouth, and 8.0 mi (12.9 km) downstream from Kellogg Creek.

DRAINAGE AREA.--701 mi² (1,816 km²).

PERIOD OF RECORD.--March 1950 to February 1952, October 1962 to current year.

PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: December 1966 to current year.
pH: December 1966 to current year.
WATER TEMPERATURES: March 1950 to February 1952, October 1962 to current year.
DISSOLVED OXYGEN: December 1966 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. See records of daily discharge for station near Painesville (station 04212100).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 30,300 micromhos July 14, 1964; minimum, 210 micromhos Jan. 10, 1978.
pH: Maximum, 12.0 units Nov. 9, 1971, Jan. 18, 1975; minimum, 4.5 units Sept. 28, 1972.
WATER TEMPERATURES: Maximum, 33.5°C June 28, 1971; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher Dec. 2, 3, 23, 1971, Mar. 11, 1972; minimum, 0.0 mg/L on several days in 1968, 1977, and July 2, Aug. 30, 1978.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 11,200 micromhos Sept. 16; minimum recorded, 210 micromhos Jan. 10.
pH: Maximum, 9.4 units Apr. 27, 28; minimum, 5.8 units Oct. 8, 9.
WATER TEMPERATURES: Maximum, 29.5°C June 30, July 22, 23; minimum, 0.0°C on many days during winter period.
DISSOLVED OXYGEN: Maximum, 13.7 mg/L Jan. 10; minimum, 0.0 mg/L July 2, Aug. 30.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (JTU)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
DEC												
21...	0600	265	7.5	1.5	20	--	12.6	90	--	--	900	6600
JAN												
05...	0930	1400	7.8	.5	6	--	13.2	93	--	--	5400	1600
FEB												
23...	0930	1920	7.2	.0	4	--	11.0	75	--	--	6000	320
MAR												
16...	1030	230	7.0	2.0	65	--	12.4	90	--	--	630	7200
APR												
13...	0930	900	7.8	12.5	15	--	10.1	94	25	--	2000	110
MAY												
04...	0900	2500	8.0	13.0	6	--	10.7	100	35	--	380	200
JUN												
14...	1100	4100	7.5	20.0	--	15	5.7	62	65	--	16000	600
JUL												
11...	1230	4000	7.4	25.5	--	15	2.5	30	55	--	520	K30
AUG												
09...	1330	4800	7.5	25.0	--	4.0	5.0	60	--	130	19000	120
SEP												
07...	1030	4500	7.4	24.5	--	5.0	3.5	41	--	9	2900	53

04212200 GRAND RIVER AT PAINESVILLE, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	ALKALINITY (MG/L AS CACO3)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
DEC 21...	75	52	23	4.2	17	2.4	28	0	23	1.4	28	39
JAN 05...	410	360	150	9.0	110	3.2	66	0	54	1.7	54	360
FEB 23...	520	450	190	11	160	3.4	90	0	74	9.1	64	500
MAR 16...	59	33	17	3.9	16	2.6	31	0	25	5.0	25	34
APR 13...	230	180	82	7.0	65	2.9	62	0	51	1.6	49	200
MAY 04...	720	640	270	10	200	3.8	93	0	76	1.5	91	640
JUN 14...	1100	1100	440	11	330	5.1	--	--	92	--	62	1150
JUL 11...	1100	1000	420	12	360	5.1	--	--	100	--	54	1200
AUG 09...	1000	930	390	11	320	9.5	--	--	86	--	47	1100
SEP 07...	940	850	360	10	310	3.4	--	--	94	--	48	1000

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
DEC 21...	.1	5.1	159	133	--	--	--	--	.07	14	--
JAN 05...	.1	6.7	866	726	--	--	--	--	.04	--	--
FEB 23...	.1	7.5	1160	980	.80	1.2	1.8	7.9	.04	8.7	--
MAR 16...	.1	4.2	130	118	.92	1.1	2.0	9.0	.11	10	280
APR 13...	.1	3.6	507	440	.54	.67	1.0	4.6	.06	--	--
MAY 04...	.1	1.4	1430	1260	.90	1.4	1.6	7.0	.04	8.5	15000
JUN 14...	.2	1.9	2570	2010	1.3	2.3	2.6	11	.09	8.7	4200
JUL 11...	.2	2.8	2660	2130	1.1	2.4	2.5	11	.09	--	--
AUG 09...	.2	.9	2250	1930	.65	1.6	2.0	8.9	.12	8.1	--
SEP 07...	.2	1.1	2080	1790	1.0	2.0	2.2	9.6	.07	7.2	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

ANALYSES OF MINOR ELEMENTS

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)
JAN 05...	0930	1	1	0	0	50	21	2	2	7	7	740
APR 13...	0930	0	0	0	0	30	23	0	0	9	9	1500
JUL 11...	1230	1	0	7	3	20	2	0	0	8	5	1400

DATE	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN 05...	70	5	4	70	70	<.5	<.5	0	0	10	10
APR 13...	100	6	0	70	40	<.5	<.5	0	0	10	10
JUL 11...	40	230	13	160	150	.5	.5	0	0	20	10

SUSPENDED SEDIMENT DISCHARGE

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)
DEC 21...	0800	5860	1.5	86	1360
JAN 05...	0930	600	.5	6	9.7
FEB 23...	0930	250	.0	5	3.4
MAR 16...	1030	8000	2.0	194	4190
APR 13...	0930	718	12.5	24	47
MAY 04...	0900	121	13.0	10	3.3
JUN 14...	1100	78	20.0	24	5.1
JUL 11...	1230	44	25.5	22	2.6
AUG 09...	1330	30	25.0	22	1.8
SEP 07...	1030	18	24.5	16	.78

04212200 GRAND RIVER AT PAINESVILLE, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	2070	1770	4200	3720	540	360	---	---	---	---	2190	1950
2	1770	840	4170	3690	420	300	---	---	---	---	2100	1950
3	1020	870	---	---	480	330	---	---	---	---	2130	1890
4	960	840	---	---	540	450	---	---	---	---	2070	1890
5	1200	960	1170	930	570	450	1410	1200	---	---	1920	1890
6	1440	1170	1260	960	600	510	1410	1320	---	---	2070	1890
7	1740	1410	4050	990	570	480	1440	1350	---	---	1980	1740
8	2160	1740	3630	1920	540	480	1380	300	1110	1080	1920	1770
9	1770	540	1800	1260	510	480	360	300	1290	1020	2160	1830
10	540	480	1290	600	540	480	360	210	1350	1200	2190	1980
11	750	510	690	600	570	510	---	---	1380	1200	2130	1980
12	1020	780	690	630	600	540	---	---	1440	1290	1980	1890
13	1260	1020	720	690	660	510	---	---	1500	1320	---	---
14	1500	1230	780	720	660	270	---	---	---	---	---	---
15	1800	1500	810	660	260	240	---	---	1710	1440	---	---
16	1860	1410	660	570	250	220	---	---	1710	1530	---	---
17	1590	1380	600	330	280	220	1200	840	1710	1560	---	---
18	1770	1530	360	330	280	250	1260	1140	1710	1590	---	---
19	2040	1740	390	330	250	220	1230	1020	1710	1590	---	---
20	1380	1380	420	390	280	220	1170	1020	1800	1620	---	---
21	1770	1410	480	420	280	250	---	---	1830	1710	---	---
22	2250	1710	570	480	340	250	---	---	1950	1800	---	---
23	2250	1860	720	570	430	340	---	---	2100	1890	---	---
24	2130	2010	840	720	550	430	---	---	2190	1950	---	---
25	2310	2130	960	840	550	280	---	---	2100	1950	---	---
26	2940	2340	960	870	310	310	---	---	2160	1950	---	---
27	3270	2670	930	870	---	---	---	---	2070	1920	---	---
28	3150	2820	960	900	---	---	---	---	2160	1830	---	---
29	3240	2850	1020	930	---	---	---	---	---	---	---	---
30	3420	2970	1080	630	---	---	---	---	---	---	---	---
31	3960	3150	---	---	---	---	---	---	---	---	---	---
MONTH	3960	480	4200	330	660	220	1440	210	2190	1020	2190	1740

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	2340	1890	1590	1320	4020	3600	7800	3900	5670	2610
2	---	---	2370	2100	2220	1650	4770	3900	6120	3000	5910	2910
3	---	---	2460	2220	2370	2100	5490	4740	7950	4200	5370	4140
4	---	---	3180	2520	2400	1800	5430	3930	6240	2400	10100	4500
5	---	---	3300	2640	3420	2340	4830	3300	2940	2400	9660	4530
6	---	---	2820	2070	3720	3300	4590	4050	3000	2940	7110	4390
7	---	---	2040	1830	3240	2910	4530	4200	3930	2700	6000	3240
8	---	---	2040	1800	3900	3000	4530	3720	5130	3270	6540	4080
9	---	---	2370	1320	3540	2820	3750	3600	5850	2100	7080	4230
10	---	---	1320	1110	2880	2550	3810	3600	6330	3270	7920	4710
11	---	---	1140	1020	2850	2400	4140	3810	7200	4260	7380	3720
12	---	---	1110	1020	3540	2940	4290	3630	5850	4800	6060	4080
13	---	---	1170	1020	5160	3420	4560	3420	5400	3180	6540	4800
14	---	---	900	600	4920	3000	5730	3600	3240	2400	9270	6540
15	---	---	720	330	3000	2700	7050	4170	3240	2550	10500	6090
16	---	---	420	300	3480	2400	5700	3540	5040	3270	11200	5580
17	---	---	480	330	4530	3000	5970	3450	5220	4140	8310	5400
18	---	---	450	300	4530	4200	6600	3210	4980	3720	7590	3180
19	---	---	480	330	4260	4140	5700	4140	5130	4020	3150	2400
20	---	---	600	480	4470	3870	6300	3630	7200	5040	3150	2400
21	---	---	600	540	3900	3300	6330	3150	7440	3990	4020	2940
22	---	---	630	540	3630	3000	6780	4560	5400	4410	4830	3600
23	1020	840	840	600	3120	2730	7530	5040	6420	4200	4830	4200
24	1170	1020	930	600	2910	2700	7620	4020	6720	3300	4320	3090
25	1320	1140	990	780	3330	2880	8070	4500	4110	3450	3990	2780
26	1410	1200	1050	900	4740	3210	7230	4170	4140	3270	5460	2970
27	1530	1380	930	840	5760	4650	5940	4680	4440	3360	5220	3060
28	1620	1500	1140	900	4620	3660	9120	4740	5400	3840	7650	3840
29	1830	1620	1380	1140	3930	3600	9720	5130	5700	3690	8610	4890
30	1980	1740	1800	1410	4020	3630	8400	5730	6840	4140	6780	3780
31	---	---	2310	1020	---	---	9000	4500	6000	2910	---	---
MONTH	1980	840	3300	300	5760	1320	9720	3150	7950	2100	11200	2400
YEAR	11200	210										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04212200 GRAND RIVER AT PAINESVILLE, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.8	7.2	8.1	7.8	7.8	6.4	---	---	---	---	7.6	7.5
2	8.0	7.5	7.8	7.5	7.7	7.6	---	---	---	---	7.6	7.3
3	8.0	7.8	7.7	7.0	7.8	7.7	---	---	---	---	7.6	7.5
4	7.9	7.6	7.6	6.5	7.8	7.7	---	---	---	---	7.6	7.5
5	8.0	7.8	7.5	6.7	7.8	7.7	8.0	7.8	---	---	7.6	7.5
6	8.0	7.6	7.4	6.7	7.8	7.6	8.0	7.9	---	---	7.6	7.5
7	8.0	7.7	7.3	6.8	7.9	7.7	7.9	7.8	---	---	7.6	7.3
8	8.1	5.8	7.7	7.4	7.7	7.4	8.0	7.7	7.5	7.0	7.5	7.5
9	7.9	5.8	7.6	6.9	7.7	7.6	7.7	7.5	7.6	7.2	7.6	7.1
10	7.8	7.6	8.1	7.5	7.6	7.4	---	---	7.5	7.2	7.6	7.5
11	7.9	7.5	8.9	7.8	7.4	7.3	---	---	7.5	7.4	7.6	7.4
12	8.0	7.7	8.0	7.9	7.6	7.4	---	---	7.5	7.4	7.6	7.6
13	8.0	7.5	8.0	8.0	7.6	7.5	---	---	7.5	7.4	---	---
14	8.0	7.4	8.0	8.0	7.7	7.3	---	---	7.5	7.3	---	---
15	7.9	7.5	8.0	7.9	7.3	7.0	---	---	7.5	7.2	---	---
16	8.2	7.7	7.9	6.0	7.3	7.2	---	---	7.5	7.3	---	---
17	8.2	7.9	7.8	6.0	7.4	7.3	7.6	7.5	7.4	7.3	7.5	7.3
18	8.2	7.8	7.8	7.7	7.4	7.3	7.8	7.4	7.4	7.3	7.3	7.2
19	8.1	7.7	7.7	7.7	7.3	7.3	7.7	7.3	7.4	7.2	7.5	7.3
20	8.2	7.7	7.7	7.6	7.5	7.3	7.7	7.5	7.4	7.2	7.5	7.4
21	8.3	7.7	7.8	6.6	7.5	7.4	---	---	7.3	7.2	7.6	7.2
22	8.3	7.3	7.9	7.8	7.6	7.5	---	---	7.4	7.3	7.6	7.5
23	8.5	7.9	7.9	7.8	7.7	7.5	---	---	7.4	7.2	7.6	7.3
24	8.2	7.7	8.0	7.9	7.8	7.6	---	---	7.5	7.3	7.8	7.6
25	8.5	7.7	8.0	7.9	8.0	7.7	---	---	7.5	7.4	7.8	7.6
26	8.2	7.6	8.2	8.0	7.8	7.6	---	---	7.5	7.5	7.9	7.8
27	8.1	7.0	8.2	8.0	---	---	---	---	7.5	7.4	7.9	7.8
28	8.1	7.5	8.1	7.9	---	---	---	---	7.6	7.2	7.8	7.8
29	8.4	7.7	7.9	7.5	---	---	---	---	---	---	7.9	7.8
30	8.3	7.8	7.9	7.8	---	---	---	---	---	---	7.9	7.9
31	8.2	7.6	---	---	---	---	---	---	---	---	7.9	7.9
MONTH	8.5	5.8	8.9	6.0	8.0	6.4	8.0	7.3	7.6	7.0	7.9	7.1

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.0	7.9	9.0	8.5	7.8	7.3	7.5	7.2	---	---	8.1	7.3
2	8.0	7.9	8.7	8.3	7.7	7.5	7.5	7.2	---	---	7.8	7.2
3	8.1	7.6	8.5	8.2	7.9	7.5	7.5	7.4	---	---	7.5	7.2
4	---	---	8.1	7.9	7.7	7.5	7.5	7.3	---	---	7.8	7.2
5	---	---	8.1	7.7	7.7	7.6	7.6	7.3	---	---	7.8	7.3
6	---	---	7.9	7.6	7.6	7.2	7.6	7.3	7.9	7.5	7.6	7.1
7	---	---	8.0	7.7	7.5	7.2	7.5	7.2	7.9	7.5	7.6	7.2
8	---	---	8.1	7.2	7.5	7.2	7.8	7.3	7.9	7.7	7.7	7.2
9	---	---	8.1	7.8	7.6	7.2	7.8	7.3	8.2	7.4	8.0	7.3
10	---	---	8.4	7.9	7.8	7.4	7.6	7.5	8.1	7.3	7.7	7.3
11	---	---	8.4	7.9	7.6	7.3	7.6	7.4	7.9	7.2	8.0	7.4
12	7.8	7.5	8.2	7.6	7.4	7.3	7.7	7.3	7.9	7.2	7.8	7.6
13	7.9	7.7	8.2	7.1	7.6	7.3	7.8	7.4	8.2	7.7	7.6	7.5
14	7.9	7.8	8.0	7.8	7.9	7.5	7.7	7.2	8.2	7.5	7.6	7.4
15	8.0	7.8	7.8	7.6	8.0	7.6	7.9	7.3	7.9	7.3	7.8	7.4
16	8.0	7.8	7.7	7.6	7.8	7.5	7.9	7.3	7.5	7.3	8.0	7.6
17	8.0	7.7	7.7	7.6	7.5	7.4	8.2	7.3	7.7	7.3	8.0	7.7
18	7.9	7.6	7.6	7.5	7.6	7.2	8.4	7.5	7.8	7.2	---	---
19	8.5	7.6	7.7	7.5	7.9	7.5	7.8	7.2	7.5	7.2	---	---
20	8.6	7.9	7.9	7.6	7.9	7.5	8.0	7.3	7.5	7.3	---	---
21	8.2	7.9	8.1	7.4	7.7	7.4	7.8	7.2	8.2	7.5	7.6	7.5
22	8.2	7.9	8.5	7.7	8.2	7.6	7.5	7.1	7.7	7.3	7.8	7.5
23	8.4	7.9	8.4	7.8	8.0	7.5	7.6	7.2	8.0	7.4	7.9	7.8
24	8.6	7.9	8.4	7.6	7.9	7.4	---	---	7.8	7.3	8.1	7.5
25	9.0	8.1	8.8	7.9	7.6	7.2	---	---	7.5	7.2	8.2	7.8
26	9.3	8.5	8.8	8.0	7.5	7.3	---	---	7.5	7.2	8.4	7.8
27	9.4	8.6	8.7	7.9	7.5	7.3	---	---	7.4	7.1	8.3	7.8
28	9.4	8.8	8.5	7.8	7.6	7.2	---	---	7.5	7.2	8.2	7.9
29	9.3	8.7	8.4	7.5	7.6	7.3	---	---	7.5	7.2	8.3	7.8
30	9.2	8.7	8.2	7.5	7.7	7.4	---	---	7.5	7.2	8.3	7.8
31	---	---	8.1	7.6	---	---	---	---	7.8	7.3	---	---
MONTH	9.4	7.5	9.0	7.1	8.2	7.2	8.4	7.1	8.2	7.1	8.4	7.1
YEAR	9.4	5.8										

04212200 GRAND RIVER AT PAINESVILLE, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	18.0	17.0	11.5	10.5	5.0	3.5	---	---	---	---	1.0	.5
2	17.5	14.0	12.0	10.5	4.5	4.5	---	---	---	---	1.0	.5
3	14.0	13.0	14.0	12.0	4.5	3.5	---	---	---	---	1.0	.5
4	14.5	12.5	15.5	14.0	3.5	3.0	---	---	---	---	1.0	.5
5	14.0	13.0	15.5	15.0	---	---	.5	.0	---	---	1.0	.5
6	15.0	13.0	16.0	15.5	1.5	.5	.0	.0	---	---	1.0	.5
7	14.5	13.0	16.5	16.0	1.0	.5	.0	.0	---	---	1.0	.0
8	14.0	12.0	16.5	15.5	.5	.0	.0	.0	---	---	1.0	.5
9	12.5	11.0	16.0	15.0	.5	.0	.5	.0	.5	.0	1.5	.0
10	12.0	11.0	15.5	11.5	.5	.0	.0	.0	.5	.5	1.5	.5
11	12.0	11.0	11.0	7.5	.5	.0	---	---	.5	.5	1.5	1.0
12	11.0	9.5	7.5	6.5	.5	.0	---	---	.5	.0	1.0	1.0
13	10.5	9.0	6.5	5.0	1.0	.5	---	---	.5	.5	---	---
14	10.5	9.5	5.0	4.5	1.0	.0	---	---	1.0	.0	---	---
15	10.5	9.0	5.5	4.5	1.0	.5	---	---	.5	.0	---	---
16	10.0	8.5	6.5	5.0	1.5	1.0	---	---	.5	.5	---	---
17	8.5	7.0	7.0	6.0	1.5	1.0	.5	.0	.5	.5	.5	.0
18	9.5	7.0	6.5	5.5	2.5	1.5	.5	.0	.5	.0	.5	.0
19	9.5	8.5	5.5	5.0	2.0	2.0	.0	.0	.5	.0	1.0	.5
20	11.5	9.0	6.5	5.0	2.5	2.0	.5	.0	.5	.0	1.0	.5
21	11.5	10.0	7.0	6.0	2.0	1.5	---	---	.5	.0	2.5	1.5
22	12.0	10.5	6.0	5.5	1.5	1.0	---	---	.5	.0	3.0	1.5
23	12.0	10.5	6.5	5.5	1.5	1.0	---	---	.5	.0	3.5	1.0
24	12.0	10.5	6.5	5.5	2.5	.5	---	---	1.0	.5	3.5	1.0
25	12.5	11.5	5.5	5.0	3.0	.5	---	---	1.0	.5	3.5	2.0
26	14.0	13.0	5.0	2.0	1.0	.0	---	---	1.0	.5	4.0	2.5
27	15.0	14.0	2.0	1.0	---	---	---	---	1.0	.5	4.0	2.5
28	14.5	14.0	1.5	.5	---	---	---	---	1.0	.0	4.0	2.5
29	15.0	13.5	2.0	.5	---	---	---	---	---	---	4.5	2.5
30	13.5	12.5	3.5	1.5	---	---	---	---	---	---	6.0	2.5
31	12.5	11.0	---	---	---	---	---	---	---	---	7.0	3.5
MONTH	18.0	7.0	16.5	.5	5.0	.0	.5	.0	1.0	.0	7.0	.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.5	7.0	14.5	12.0	25.0	23.5	28.0	27.0	25.5	25.0	25.5	24.0
2	9.5	6.5	12.5	12.0	26.5	25.0	27.0	24.5	26.5	25.0	25.0	23.5
3	8.0	6.5	13.5	12.0	25.5	24.0	24.5	22.0	26.5	25.5	24.0	23.0
4	9.5	7.5	14.0	12.5	24.0	22.0	22.5	21.5	26.0	24.0	25.0	23.5
5	10.0	8.0	12.5	11.0	23.0	22.0	23.0	21.0	25.5	24.0	24.5	23.5
6	9.0	8.5	11.5	10.5	22.5	20.5	25.0	22.0	25.0	20.0	24.5	23.0
7	11.5	8.5	13.0	10.0	22.0	21.0	26.0	24.0	24.5	20.0	25.5	24.0
8	11.5	8.5	15.0	13.0	22.0	20.0	28.0	26.0	25.5	24.5	26.0	25.0
9	8.5	7.5	15.5	14.5	22.5	21.0	28.0	27.0	26.0	24.5	26.0	25.0
10	11.5	7.5	14.5	13.5	23.5	21.0	27.5	26.0	26.0	25.0	26.0	24.5
11	12.5	11.5	16.0	13.0	23.5	22.0	26.5	24.5	26.5	25.5	25.5	24.5
12	13.0	10.0	16.5	16.0	24.5	23.5	26.5	23.5	26.0	24.5	25.5	25.0
13	14.0	12.0	16.0	14.5	24.5	21.0	25.0	23.0	25.5	24.5	25.0	23.5
14	12.5	11.5	15.5	14.0	21.0	19.0	25.0	24.0	27.0	25.0	23.5	21.5
15	13.5	11.5	14.5	13.0	20.0	18.5	26.0	24.5	26.5	25.5	23.0	21.5
16	14.0	12.5	15.0	13.0	20.5	19.0	26.5	25.0	26.5	26.0	23.0	22.5
17	14.0	12.5	15.0	13.5	21.5	15.0	26.5	25.5	27.0	26.0	23.0	22.0
18	14.0	12.5	16.5	13.5	24.0	21.5	26.5	25.5	28.0	26.0	23.0	21.5
19	14.0	10.0	19.0	14.5	26.0	24.0	27.0	26.0	27.5	27.0	24.0	22.5
20	14.0	9.5	19.0	17.0	27.5	26.0	28.0	26.0	27.0	25.0	24.5	23.0
21	9.0	8.0	19.0	16.5	27.0	26.0	28.5	27.5	26.5	24.0	25.5	24.5
22	10.0	6.5	19.0	15.5	27.0	25.5	29.5	28.5	26.0	25.0	25.5	24.0
23	10.0	8.0	19.0	17.5	26.0	24.5	29.5	28.5	27.0	25.0	23.5	21.0
24	11.0	9.5	19.5	17.0	26.5	24.5	29.0	27.0	26.0	25.0	22.0	20.5
25	11.5	9.0	22.0	19.0	26.0	24.5	27.5	26.5	26.0	25.5	21.0	20.5
26	13.5	10.0	23.0	20.5	25.5	24.5	27.5	26.5	27.0	25.0	21.0	20.0
27	14.0	11.5	24.0	21.0	25.5	24.5	27.5	27.0	26.5	25.5	20.5	20.0
28	14.5	13.0	25.0	22.0	27.5	25.0	27.5	26.5	26.0	25.5	20.0	19.5
29	15.0	13.5	25.5	23.0	28.0	26.5	27.5	25.5	26.5	25.0	19.5	17.5
30	15.5	13.5	26.0	24.5	29.5	28.0	25.5	25.0	26.5	25.0	18.5	18.0
31	---	---	25.5	24.0	---	---	26.0	24.5	25.0	24.0	---	---
MONTH	15.5	6.5	26.0	10.0	29.5	15.0	29.5	21.0	28.0	20.0	26.0	17.5
YEAR	29.5	.0										

04212200 GRAND RIVER AT PAINESVILLE, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.5	6.2	10.0	7.6	12.2	11.6	---	---	---	---	11.2	10.9
2	---	---	9.0	8.3	11.7	11.6	---	---	---	---	11.1	11.0
3	---	---	9.3	7.8	11.8	11.6	---	---	---	---	11.1	10.9
4	9.3	8.4	8.6	6.5	12.0	11.8	---	---	---	---	11.0	10.8
5	8.6	8.0	7.0	5.5	12.2	12.0	13.3	12.9	---	---	10.9	10.8
6	8.6	7.8	6.3	4.1	12.4	12.2	12.9	12.6	---	---	11.0	10.8
7	8.4	7.5	5.0	3.4	12.6	12.4	12.9	12.6	---	---	11.0	10.8
8	8.5	7.3	7.8	4.7	12.7	12.6	13.6	12.8	11.3	11.3	11.0	10.8
9	8.7	8.1	8.6	7.6	12.6	12.2	13.6	13.5	11.6	11.3	11.9	10.9
10	8.6	8.1	9.2	7.9	12.5	12.3	13.7	13.4	11.5	9.5	11.9	11.6
11	8.7	8.3	9.5	8.6	12.3	12.2	---	---	11.5	11.4	11.8	11.4
12	9.3	8.4	9.9	9.2	12.2	12.0	---	---	11.5	11.3	11.7	11.5
13	9.2	8.6	10.2	9.3	12.0	11.8	---	---	11.4	11.2	---	---
14	9.3	8.4	10.4	9.4	12.1	11.7	---	---	11.3	11.2	---	---
15	8.9	8.5	10.6	10.2	12.8	11.7	---	---	11.2	11.1	---	---
16	9.6	8.3	10.8	9.9	12.9	12.8	12.6	12.2	11.2	10.9	---	---
17	9.8	8.7	11.3	10.8	12.9	12.8	12.6	12.0	11.0	10.8	13.1	12.8
18	9.8	9.1	11.4	11.0	12.8	12.5	12.0	11.7	11.0	10.8	12.9	12.8
19	9.8	8.7	11.6	11.4	12.6	12.5	11.9	11.8	11.1	10.9	12.8	12.4
20	11.0	8.9	11.6	11.3	12.6	12.6	11.9	11.6	11.1	11.0	13.0	12.5
21	12.6	9.3	11.3	11.1	12.7	12.6	---	---	11.1	10.9	12.9	12.5
22	11.9	9.7	11.6	11.3	13.0	12.7	---	---	11.0	10.8	12.9	12.7
23	11.4	9.0	11.4	11.2	13.1	12.9	---	---	11.0	10.8	12.8	12.6
24	11.5	9.5	11.4	11.2	13.2	12.7	---	---	10.8	10.7	13.0	12.5
25	12.0	8.8	11.4	11.2	12.9	12.5	---	---	10.8	10.7	12.8	12.6
26	11.4	7.9	12.2	11.3	12.9	12.4	---	---	---	---	12.8	12.5
27	10.7	7.5	12.5	12.2	---	---	---	---	---	---	12.9	12.5
28	10.0	7.4	12.7	12.3	---	---	---	---	11.1	10.9	12.9	12.7
29	10.3	7.7	13.0	12.7	---	---	---	---	---	---	12.9	12.0
30	10.4	8.5	12.8	12.2	---	---	---	---	---	---	12.9	12.0
31	9.9	6.4	---	---	---	---	---	---	---	---	12.9	12.2
MONTH	12.6	6.2	13.0	3.4	13.2	11.6	13.7	11.6	11.6	9.5	13.1	10.8

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	12.3	11.1	12.3	9.9	7.3	5.6	2.9	.1	9.0	4.4	8.7	.8
2	11.9	10.9	11.8	10.1	7.5	5.4	2.3	.0	7.0	4.0	6.2	.3
3	11.9	11.6	11.7	9.7	7.0	5.0	3.4	2.2	6.2	2.8	3.2	.8
4	11.6	10.9	11.0	9.2	7.3	6.1	3.6	2.4	7.3	4.2	7.3	.5
5	11.3	10.9	10.0	8.9	6.8	5.8	5.5	3.5	7.2	5.2	6.7	2.1
6	11.3	11.0	10.1	9.0	6.7	4.4	6.4	3.0	5.6	3.6	5.7	1.7
7	11.1	10.4	10.9	10.2	5.6	4.0	5.8	3.6	7.2	4.0	6.5	2.5
8	10.8	10.4	---	---	6.2	3.9	7.0	3.3	6.1	3.7	6.5	1.7
9	11.1	10.6	---	---	7.1	4.8	6.3	2.4	8.6	4.1	8.2	2.2
10	10.7	10.1	---	---	7.8	5.4	5.0	2.5	9.2	2.1	6.6	1.4
11	10.1	9.7	---	---	6.4	4.2	4.2	1.3	9.4	2.0	8.2	2.9
12	10.8	9.6	---	---	5.2	3.5	5.8	.5	8.0	2.0	6.3	3.5
13	10.2	9.6	---	---	5.2	2.9	5.6	1.7	8.1	5.8	3.3	2.0
14	10.4	9.7	---	---	7.8	4.4	4.8	.4	8.6	4.0	4.2	1.3
15	10.2	9.1	9.4	9.3	8.9	6.4	7.5	.4	6.2	1.6	6.7	2.7
16	10.2	8.6	9.6	9.3	7.0	6.0	7.8	2.0	3.9	1.4	8.4	5.2
17	9.6	8.1	9.7	9.2	6.4	4.0	8.3	1.0	5.4	.7	8.2	4.0
18	---	---	9.6	9.2	5.8	4.4	9.9	3.5	7.0	.8	7.0	5.9
19	---	---	9.7	9.1	7.2	5.0	8.2	1.6	5.4	.6	6.3	4.0
20	---	---	9.9	8.7	8.6	4.0	10.6	3.2	4.0	.4	7.5	4.6
21	---	---	10.1	8.4	6.4	3.6	7.8	2.8	8.1	1.6	6.9	4.4
22	---	---	10.9	9.0	8.6	5.0	5.1	1.1	4.1	.4	5.6	4.6
23	---	---	10.6	8.5	8.0	4.2	5.2	.9	7.3	.2	6.7	5.4
24	---	---	10.6	8.5	7.8	3.6	---	---	8.0	2.8	8.3	4.0
25	---	---	12.4	8.2	4.8	1.8	10.0	3.4	4.5	1.5	8.5	5.4
26	---	---	11.9	7.9	4.6	3.0	10.4	1.4	6.1	.6	10.0	5.8
27	---	---	11.2	7.6	5.3	3.7	6.3	4.3	4.2	.3	10.0	6.8
28	---	---	10.1	7.3	5.9	2.5	8.4	.7	5.3	1.9	9.1	7.5
29	---	---	9.3	6.5	5.1	3.1	8.0	2.8	5.0	1.5	10.2	7.3
30	12.7	9.6	9.0	5.8	6.0	3.0	8.8	1.4	4.4	.0	10.8	7.6
31	---	---	7.6	6.3	---	---	9.3	3.2	6.9	1.2	---	---
MONTH	12.7	8.1	12.4	5.8	8.9	1.8	10.6	.0	9.4	.0	10.8	.3
YEAR	13.7	.0										

04212500 ASHTABULA RIVER NEAR ASHTABULA, OH

LOCATION.--Lat 41°51'20", long 80°45'44", Ashtabula County, Hydrologic Unit 04110003, on left bank at downstream side of State Road bridge, 1.1 mi (1.8 km) upstream from Hubbard Run, 1.3 mi (2.1 km) southeast of Ashtabula, and 5.5 mi (8.8 km) upstream from mouth.

DRAINAGE AREA.--121 mi^2 (313 km^2).

PERIOD OF RECORD.--July 1924 to December 1935, March 1939 to November 1947, March 1950 to current year.

REVISED RECORDS.--WSP 954: 1929(M). WSP 974: 1942. WSP 1437: 1926, 1932, 1934. WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 612.50 ft (186.690 m) National Geodetic Vertical Datum of 1929, unadjusted. Prior to Aug. 27, 1924, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Sediment data collected at this site 1970 to 1974.

AVERAGE DISCHARGE.--47 years, 151 ft^3/s (4.276 m^3/s), 16.95 in/yr (431 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,600 ft^3/s (329 m^3/s) Jan. 22, 1959, gage height, 11.03 ft (3.362 m); no flow at times during most years.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 2,600 ft^3/s (73.6 m^3/s) and maximums (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 15	0415	*6780	192	5.99	1.826	Mar. 14	0630	---	---	a*13.10	3.993

Minimum daily discharge, 0.46 ft^3/s (0.013 m^3/s) Sept. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	24	1500	95	180	60	109	23	12	2.0	.65	.65
2	199	25	715	95	160	60	103	20	12	2.2	.74	.55
3	219	24	268	90	150	60	173	17	11	2.0	2.4	.55
4	148	24	179	90	140	60	729	16	8.0	1.8	2.6	.60
5	93	28	170	90	130	60	1360	29	7.0	1.3	1.7	.50
6	67	27	160	90	120	60	525	67	6.1	1.1	1.2	.48
7	59	41	150	90	110	60	469	85	6.5	1.0	2.2	.48
8	54	127	140	110	100	60	260	63	7.5	.95	2.4	.48
9	657	121	130	500	95	60	144	109	7.5	.90	1.6	.46
10	789	277	130	350	90	60	97	205	6.5	.85	1.2	.50
11	265	1010	120	250	90	60	95	112	5.7	.80	.90	.55
12	138	451	120	200	85	65	205	67	5.7	.80	1.6	.58
13	103	437	500	180	80	70	147	161	6.5	.80	3.0	.58
14	82	389	3240	160	80	2400	85	696	5.3	.80	1.7	.70
15	69	446	4800	150	75	1500	59	1190	8.5	.80	1.8	2.8
16	74	1720	1560	140	75	1000	47	720	7.5	.80	3.4	3.0
17	68	1840	960	130	70	800	42	672	5.7	1.2	1.6	3.2
18	58	1250	855	120	70	650	36	970	4.2	.85	1.1	12
19	52	977	1000	110	65	700	36	330	19	.75	.83	18
20	58	582	672	110	65	800	250	147	11	.70	1.5	16
21	53	624	688	100	65	1230	576	232	14	.65	2.6	7.0
22	46	438	348	95	60	1280	402	227	10	.65	1.4	3.9
23	42	237	173	90	60	469	197	103	7.0	.70	.90	3.2
24	37	178	154	90	60	214	109	67	4.9	1.0	.70	1.7
25	34	153	864	100	60	92	85	53	3.9	.80	.60	1.5
26	31	175	483	450	60	130	65	44	4.2	.75	.60	1.4
27	29	178	250	350	60	616	50	35	3.4	.90	.55	1.4
28	28	166	150	250	60	306	39	26	2.6	1.7	.55	1.3
29	26	146	130	220	---	127	32	21	2.2	1.0	.60	1.2
30	25	179	110	200	---	173	27	16	2.0	.80	.70	1.3
31	24	---	100	190	---	121	---	14	---	.70	.80	---
TOTAL	3707	12294	20819	5285	2515	13403	6553	6537	217.4	32.05	44.12	86.56
MEAN	120	410	672	170	89.8	432	218	211	7.25	1.03	1.42	2.89
MAX	789	1840	4800	500	180	2400	1360	1190	19	2.2	3.4	18
MIN	24	24	100	90	60	60	27	14	2.0	.65	.55	.46
CFSM	.99	3.39	5.55	1.41	.74	3.57	1.80	1.74	.06	.009	.01	.02
IN.	1.14	3.78	6.40	1.62	.77	4.12	2.01	2.01	.07	.01	.01	.03

CAL YR 1977 TOTAL 97338.00 MEAN 267 MAX 4800 MIN 2.2 CFSM 2.21 IN 29.93
WTR YR 1978 TOTAL 71493.13 MEAN 196 MAX 4800 MIN .46 CFSM 1.62 IN 21.98

a ice jam

04212700 ASHTABULA RIVER AT ASHTABULA, OH

LOCATION.--Lat 41°54'00", long 80°47'44", in T.13 N., R.3 W., Ashtabula County, Hydrologic Unit 04110003, on right bank at Jack's Automarine in Ashtabula, 600 ft (183 m) upstream from bridge on State Highway 531, 4,000 ft (1,219 m) upstream from mouth, and 4,000 ft (1,219 m) downstream from Fields Brook.

DRAINAGE AREA.--136 mi² (352 km²).

PERIOD OF RECORD.--June 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1968 to current year.
pH: June 1968 to current year.
WATER TEMPERATURES: June 1968 to current year.
DISSOLVED OXYGEN: June 1968 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. See records of discharge for gaging station near Ashtabula (station 04212500).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 3,000 micromhos Aug. 20, 1970, Dec. 20, 1973, Jan. 27, Feb. 3, 4, Aug. 30, Sept. 1, 1974; minimum, 39 micromhos June 18, 1972.
pH: Maximum, 11.7 units Aug. 22, 1970; minimum, 4.4 units Sept. 28, 1970.
WATER TEMPERATURES: Maximum, 29.0°C Aug. 23, 24, 1968, July 7, 1977, July 22, 1978; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher Feb. 22-28, 1971, Feb. 13-15, Dec. 15-17, 1973; minimum, 0.0 mg/L Mar. 16, 17, 1971.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded 2,120 micromhos Sept. 18; minimum recorded, 192 micromhos Jan. 9.
pH: Maximum, 8.5 units July 17; minimum, 6.0 units Dec. 13.
WATER TEMPERATURES: Maximum, 29.0°C July 22; minimum, 0.0°C on many days during winter period.
DISSOLVED OXYGEN: Maximum, 13.7 mg/L Dec. 27; minimum, 2.5 mg/L June 5.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	903	630					---	---	---	---	534	387
2	1040	570					---	---	---	---	564	396
3	567	462					---	---	345	273	---	---
4	573	426					---	---	330	288	597	432
5	675	459					---	---	321	303	513	402
6	999	615					---	---	336	294	465	324
7	849	435					---	---	339	291	351	324
8	921	504					---	---	366	303	363	321
9	1240	291					282	192	366	330	444	339
10	294	255					384	285	471	351	480	405
11	---	---					375	345	471	393	462	417
12	---	---					---	---	---	---	642	447
13	---	---					483	303	378	360	936	594
14	---	---					456	333	378	354	891	876
15	---	---					375	339	390	363	---	---
16	---	---					354	324	390	369	279	261
17	---	---					333	300	480	354	306	288
18	---	---					351	321	408	366	360	312
19	---	---					378	354	411	357	390	324
20	---	---					357	348	417	351	357	285
21	---	---					354	345	435	345	333	255
22	---	---					345	330	414	366	279	246
23	---	---					366	336	483	393	330	279
24	---	---					366	348	411	384	423	324
25	---	---					465	348	411	393	462	378
26	---	---					---	---	435	405	672	432
27	---	---					---	---	492	390	852	342
28	---	---					---	---	579	405	435	339
29	---	---					---	---	---	---	516	405
30	---	---					---	---	---	---	444	354
31	---	---					---	---	---	---	606	363
MONTH	1240	255					483	192	579	273	936	246

04212700 ASHTABULA RIVER AT ASHTABULA, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	780	618	1420	1170	1130	804	1270	720	1040	639	1580	1220
2	855	798	1550	1320	1110	762	1250	906	1250	690	1480	888
3	891	750	1510	1340	1070	909	1080	951	1560	1080	1400	1010
4	864	402	1480	1450	1460	825	1130	831	1970	729	1620	477
5	384	264	1510	918	1340	819	1290	840	1070	600	1070	567
6	450	279	1280	1030	1280	1030	1430	672	1100	789	1350	909
7	522	399	1380	954	1430	852	1300	810	1130	807	1410	876
8	495	414	993	669	1450	1180	1310	831	1510	942	1420	1010
9	666	420	1240	942	1880	1140	1070	633	1550	945	1680	960
10	687	615	1250	696	1780	1410	957	786	1840	1290	1550	894
11	918	690	759	570	1830	1300	1020	648	1640	792	1610	1040
12	1050	621	771	621	1540	918	999	648	1410	927	1880	1110
13	678	573	1110	696	1170	999	1560	705	1320	840	1990	1640
14	780	630	1040	363	1280	492	1490	570	1270	633	1920	1530
15	975	744	444	285	1200	534	1240	840	1440	639	2010	1190
16	978	819	372	297	1340	1100	1220	735	1700	1110	1840	990
17	1010	921	465	321	1630	1240	1130	576	1970	1260	1700	1130
18	1100	1010	321	270	1660	1230	1380	714	1790	972	2120	1250
19	1090	1030	465	300	1620	1240	1350	699	1910	954	2090	792
20	1370	825	573	384	1600	1290	1620	801	1710	1260	1320	681
21	771	441	750	534	1520	702	1730	1180	1520	765	1340	933
22	564	366	570	471	1240	966	1700	1140	1260	837	1410	909
23	798	411	780	459	1270	636	1640	1240	1760	1210	1410	807
24	666	444	738	531	1040	834	1550	891	1690	1540	1190	807
25	909	627	819	450	1520	867	1460	1120	1930	1180	1270	882
26	987	870	810	489	1420	852	2030	1390	1300	693	1270	894
27	975	873	1060	570	1240	609	1750	1280	1200	711	1130	894
28	924	798	1200	486	1520	729	1970	978	1350	1070	1570	651
29	972	678	1180	468	1320	762	1810	1150	1660	1130	837	552
30	1300	825	1140	456	1370	633	1860	1000	1860	1640	1010	741
31	---	---	1060	729	---	---	1550	684	2050	1110	---	---
MONTH	1370	264	1550	270	1880	492	2030	570	2050	600	2120	477
YEAR	2120	192										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04212700 ASHTABULA RIVER AT ASHTABULA, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.8	7.6	---	---	7.3	7.1	7.5	7.2	6.9	6.4	7.6	7.6
2	7.8	7.6	---	---	7.2	7.1	7.6	7.4	7.0	6.9	7.6	7.5
3	7.9	7.8	---	---	7.2	7.1	7.6	7.3	7.0	6.9	7.8	7.5
4	7.9	7.6	---	---	7.2	7.2	7.8	7.5	7.0	6.7	7.7	7.5
5	7.8	7.5	---	---	7.2	7.2	7.9	7.6	6.9	6.8	7.6	7.5
6	7.8	7.5	---	---	7.2	7.2	7.8	7.4	7.0	6.8	7.5	7.3
7	8.1	7.7	---	---	7.3	7.2	7.8	7.5	7.1	6.9	7.5	7.4
8	8.0	7.6	---	---	7.2	7.2	7.5	6.9	7.1	6.9	7.5	7.3
9	7.6	7.5	---	---	7.2	7.1	7.1	6.9	7.1	6.9	7.8	7.2
10	7.4	7.3	---	---	7.2	7.1	7.1	7.0	7.0	6.9	7.9	7.6
11	7.4	7.3	---	---	7.2	7.0	7.0	6.8	7.1	6.9	7.8	7.7
12	7.4	7.3	---	---	7.0	6.5	7.0	6.3	7.1	7.0	7.7	7.5
13	7.8	7.3	---	---	7.0	6.0	7.1	7.0	7.1	7.0	7.6	7.4
14	8.0	7.6	---	---	7.2	6.4	7.2	7.1	7.2	7.0	7.4	7.4
15	7.7	7.5	---	---	6.6	6.4	7.1	7.0	7.2	7.1	---	---
16	7.5	7.4	---	---	7.1	6.5	7.1	7.0	7.2	7.1	7.0	6.9
17	7.7	7.4	---	---	7.1	6.9	7.1	7.0	7.3	7.2	7.1	7.0
18	7.6	7.4	---	---	7.3	7.1	7.2	7.1	7.4	7.2	7.2	7.0
19	7.6	7.4	---	---	7.3	7.2	7.1	7.1	7.5	7.3	7.3	7.2
20	7.7	7.4	---	---	7.3	7.2	7.1	7.0	7.5	7.3	7.3	7.1
21	7.7	7.5	7.1	7.0	7.3	7.2	7.0	7.0	7.5	7.4	7.2	7.0
22	7.6	7.4	7.1	7.0	7.4	7.3	7.0	7.0	7.5	7.4	7.0	6.6
23	7.5	7.3	7.1	7.1	7.4	7.3	7.0	6.9	7.5	7.4	7.1	7.0
24	7.6	7.5	7.2	7.1	7.4	7.3	7.1	7.0	7.6	7.5	7.2	7.1
25	7.6	7.4	7.3	7.2	7.5	7.2	7.1	7.1	7.7	7.5	7.3	7.2
26	7.5	7.3	7.3	7.2	7.2	7.1	7.4	7.1	7.6	7.6	7.3	7.3
27	7.3	7.3	7.3	7.3	7.1	7.0	7.1	6.9	7.6	7.5	7.3	7.2
28	---	---	7.3	7.3	7.2	7.0	6.9	6.6	7.6	7.5	7.3	7.2
29	---	---	7.3	7.2	7.2	7.1	6.7	6.6	---	---	7.3	7.3
30	---	---	7.4	7.2	7.2	7.2	6.8	6.7	---	---	7.4	7.3
31	---	---	---	---	7.2	7.2	6.8	6.6	---	---	7.4	7.3
MONTH	8.1	7.3	7.4	7.0	7.5	6.0	7.9	6.3	7.7	6.4	7.9	6.6

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.5	7.4	7.6	7.5	7.6	7.4	7.8	7.7	8.3	7.9	7.4	7.2
2	7.5	7.4	7.7	7.5	7.5	7.4	7.7	7.6	8.4	8.0	7.7	7.3
3	7.5	7.4	7.7	7.6	7.5	7.4	7.7	7.6	7.9	7.7	7.5	7.3
4	7.5	7.4	7.7	7.5	7.6	7.4	7.7	7.6	8.1	7.6	8.1	7.3
5	7.4	7.2	7.9	7.5	7.7	7.2	7.9	7.6	8.4	7.9	8.0	7.5
6	7.3	7.2	7.7	7.6	7.5	7.3	8.0	7.7	8.1	7.8	7.8	7.4
7	7.4	7.3	7.9	7.5	7.6	7.4	8.1	7.7	8.0	7.7	7.7	7.4
8	7.4	7.4	8.1	7.7	7.6	7.4	8.0	7.7	7.8	7.6	7.5	7.4
9	7.5	7.4	7.7	7.6	7.8	7.5	8.2	7.9	8.0	7.7	7.5	7.3
10	7.5	7.5	7.8	7.6	7.8	7.5	8.2	7.8	7.8	7.6	7.5	7.3
11	7.5	7.4	7.9	7.7	7.8	7.6	8.1	7.7	8.2	7.6	7.4	7.3
12	7.7	7.5	7.9	7.8	7.8	7.7	8.2	7.8	8.0	7.7	7.4	7.2
13	7.7	7.6	7.8	7.5	7.7	7.6	8.1	7.8	8.1	7.7	7.3	7.2
14	7.6	7.2	7.6	7.5	8.1	7.6	8.4	7.8	8.4	7.7	7.3	7.2
15	7.5	7.4	7.5	7.4	8.1	7.6	8.4	7.8	8.4	7.7	7.5	7.3
16	7.5	7.5	7.6	7.4	7.8	7.6	8.3	7.8	7.8	7.6	7.5	7.3
17	7.5	7.5	7.6	7.4	7.7	7.6	8.5	7.8	8.1	7.7	7.5	7.3
18	7.6	7.5	7.6	7.4	7.9	7.6	8.3	7.9	8.3	7.7	7.4	7.1
19	7.6	7.6	7.7	7.4	7.9	7.6	8.3	7.7	8.1	7.8	7.5	7.1
20	7.6	7.5	7.8	7.3	7.9	7.5	8.1	7.7	7.9	7.7	7.7	7.2
21	7.7	7.6	7.6	7.4	7.8	7.5	8.1	7.7	8.4	7.8	7.4	7.3
22	7.8	7.6	7.8	7.4	8.0	7.6	8.3	7.7	8.3	7.5	7.6	7.2
23	7.7	7.5	8.0	7.6	8.4	7.6	7.9	7.7	8.0	7.5	7.5	7.3
24	7.6	7.5	7.8	7.6	8.1	7.7	8.4	7.7	7.7	7.4	7.6	7.3
25	7.6	7.3	8.1	7.7	8.0	7.6	8.0	7.7	7.5	7.3	7.6	7.4
26	7.4	7.3	8.0	7.8	7.7	7.5	8.3	7.7	8.0	7.4	7.7	7.4
27	7.6	7.4	7.9	7.6	7.7	7.5	7.8	7.7	7.9	7.6	7.8	7.5
28	7.6	7.4	7.8	7.5	7.7	7.5	8.0	7.6	7.6	7.4	8.0	7.5
29	7.6	7.6	7.9	7.6	7.7	7.6	7.9	7.6	7.5	7.3	8.0	7.8
30	7.6	7.5	7.8	7.5	8.0	7.6	8.0	7.6	7.4	7.2	7.9	7.7
31	---	---	7.8	7.6	---	---	8.4	7.8	7.3	7.2	---	---
MONTH	7.8	7.2	8.1	7.3	8.4	7.2	8.5	7.6	8.4	7.2	8.1	7.1
YEAR	8.5	6.0										

STREAMS TRIBUTARY TO LAKE ERIE

04212700 ASHTABULA RIVER AT ASHTABULA, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	17.5	17.5	---	---	5.0	2.5	1.5	.5	.0	.0	.0	.0
2	17.5	15.0	---	---	4.5	4.5	1.5	.5	.0	.0	.0	.0
3	15.0	13.0	---	---	4.5	3.5	1.5	.5	.0	.0	.0	.0
4	15.0	13.0	---	---	3.5	2.5	.5	.5	.5	.0	.0	.0
5	14.5	14.0	---	---	3.0	2.5	.5	.5	.0	.0	.0	.0
6	15.0	14.5	---	---	2.0	1.5	1.5	.5	.0	.0	.0	.0
7	15.5	14.5	---	---	1.5	.5	1.0	.5	.0	.0	.0	.0
8	15.0	14.0	---	---	1.0	.5	2.5	.0	.0	.0	.0	.0
9	14.5	11.5	---	---	.5	.0	.0	.0	.0	.0	.0	.0
10	12.0	11.0	---	---	.5	.0	.0	.0	.0	.0	.0	.0
11	12.0	11.0	---	---	.5	.5	.5	.0	.0	.0	.0	.0
12	11.0	10.0	---	---	1.0	.5	.5	.0	.0	.0	.5	.0
13	11.5	9.5	---	---	1.5	.5	.5	.0	.0	.0	1.5	.5
14	12.5	11.0	---	---	1.5	.5	.5	.0	.0	.0	1.0	1.0
15	12.0	11.5	---	---	1.0	.5	.5	.0	.0	.0	---	---
16	12.0	10.5	---	---	1.5	.5	.0	.0	.0	.0	.5	.0
17	10.5	9.5	---	---	2.0	.5	.0	.0	.0	.0	.5	.0
18	10.0	9.5	---	---	3.0	2.0	.0	.0	.0	.0	.5	.0
19	10.5	10.0	---	---	3.5	3.0	.0	.0	.0	.0	1.0	.5
20	11.5	10.5	---	---	3.5	3.0	.0	.0	.0	.0	.5	.0
21	12.0	11.0	6.5	6.0	3.5	2.5	.0	.0	.0	.0	.5	.5
22	12.5	12.0	6.0	5.0	2.5	.5	.0	.0	.0	.0	2.0	.0
23	12.5	12.0	5.5	5.0	1.5	.5	.0	.0	.0	.0	4.0	2.0
24	13.0	11.5	6.0	5.0	2.0	1.0	.0	.0	.0	.0	4.0	2.5
25	13.0	12.0	5.5	5.5	3.5	.5	.5	.0	.0	.0	3.5	1.5
26	14.0	12.5	5.5	2.5	.5	.5	1.0	.0	.0	.0	3.5	1.5
27	13.5	13.5	2.5	.5	.5	.5	.5	.0	.0	.0	4.0	2.5
28	---	---	1.0	.5	.5	.5	.5	.0	.0	.0	4.0	2.5
29	---	---	1.5	.5	1.0	.5	.5	.0	---	---	4.0	4.0
30	---	---	3.0	1.5	1.0	.5	.5	.0	---	---	5.0	4.0
31	---	---	---	---	1.0	.5	.0	.0	---	---	6.5	4.0
MONTH	17.5	9.5	6.5	.5	5.0	.0	2.5	.0	.5	.0	6.5	.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.5	6.5	13.5	13.5	23.0	18.5	25.0	23.5	25.0	24.0	24.5	24.0
2	9.0	8.5	13.5	13.0	22.5	19.5	24.5	22.5	26.0	24.0	24.5	23.5
3	9.0	7.5	14.5	13.5	21.0	20.0	22.5	21.0	25.5	25.0	24.0	23.5
4	9.5	7.0	14.0	13.5	23.0	20.0	21.5	19.0	25.5	24.5	23.5	22.5
5	10.5	8.5	13.5	11.5	22.0	19.0	22.0	18.5	24.5	24.0	23.5	22.5
6	9.5	8.5	12.5	11.5	22.0	20.0	24.0	18.0	24.5	24.0	25.0	23.0
7	11.5	8.0	13.0	12.0	21.5	19.5	24.0	19.5	24.5	24.0	25.0	24.0
8	11.5	9.0	13.5	11.5	21.5	20.5	24.0	20.0	26.0	24.0	25.5	24.5
9	9.5	8.0	15.0	13.0	23.5	20.5	23.0	22.0	26.0	24.0	25.5	24.5
10	9.0	7.5	15.0	14.5	23.5	21.0	23.0	22.5	25.5	25.0	25.0	24.5
11	11.5	9.0	15.5	13.5	25.0	22.0	22.5	22.0	25.0	24.5	25.0	24.5
12	12.5	11.0	15.0	13.0	23.5	21.0	23.5	22.5	25.0	24.5	25.0	24.5
13	13.0	11.0	16.0	14.0	21.5	20.0	24.5	23.0	25.5	24.5	24.5	23.0
14	12.0	9.5	16.0	14.0	20.0	19.0	24.5	21.5	26.0	25.0	23.0	22.5
15	11.5	10.5	13.5	12.0	20.5	19.0	25.5	23.0	27.0	25.0	23.0	22.0
16	11.5	10.5	15.5	12.5	20.5	19.5	25.5	23.5	26.5	24.5	22.5	21.5
17	12.0	11.0	15.5	13.5	22.5	20.0	25.0	24.0	27.0	24.5	22.5	21.5
18	12.0	11.5	17.5	13.0	24.0	21.0	26.0	24.5	26.5	25.0	23.5	22.0
19	13.0	11.5	19.0	15.5	24.0	21.5	27.0	25.0	27.5	25.0	23.5	22.0
20	13.0	10.5	18.5	13.0	25.5	23.0	28.0	25.0	25.5	25.0	24.0	22.0
21	10.0	7.0	19.0	16.5	25.0	21.5	28.0	26.5	25.0	24.5	25.0	23.0
22	9.0	6.0	18.0	15.5	24.5	22.5	29.0	26.5	25.5	23.5	24.0	22.5
23	9.5	9.0	18.0	16.0	24.0	22.5	28.5	27.5	27.5	25.0	22.5	21.5
24	10.0	8.5	18.5	15.0	24.5	23.5	27.5	27.0	26.0	25.5	22.0	21.5
25	11.0	10.0	18.5	14.0	26.0	23.5	27.0	26.0	26.5	25.0	21.5	21.0
26	12.0	10.5	19.5	16.5	25.5	22.5	28.5	26.0	25.5	24.5	21.0	20.0
27	13.5	11.5	21.5	16.5	25.5	21.5	27.0	25.5	26.0	25.0	20.5	19.5
28	14.5	12.5	21.5	15.5	27.0	22.5	26.5	25.0	26.0	25.5	20.0	19.5
29	15.0	11.0	22.0	15.0	27.0	23.0	25.0	24.5	26.5	25.0	19.5	18.5
30	14.0	12.5	22.0	15.0	26.0	23.5	24.5	23.5	26.0	25.5	19.0	18.5
31	---	---	22.0	17.0	---	---	24.5	23.5	25.5	24.0	---	---
MONTH	15.0	6.0	22.0	11.5	27.0	18.5	29.0	18.0	27.5	23.5	25.5	18.5
YEAR	29.0	.0										

04212700 ASHTABULA RIVER AT ASHTABULA, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	6.5	6.2	---	---	11.8	11.4	12.0	11.2	9.4	8.8	13.2	13.0
2	7.1	5.9	---	---	11.6	11.5	13.0	11.7	11.7	8.3	13.1	12.8
3	8.8	7.2	---	---	11.7	11.4	12.4	11.5	11.8	11.1	12.9	12.7
4	9.5	8.8	---	---	12.0	11.7	13.0	11.8	11.2	11.0	12.8	12.6
5	9.5	9.0	---	---	12.2	11.5	13.0	11.8	11.3	11.1	12.8	12.4
6	9.1	8.4	---	---	12.0	11.5	12.2	10.8	11.3	11.1	12.5	12.0
7	9.3	8.6	---	---	12.5	12.1	11.8	11.1	11.2	11.0	12.2	11.9
8	9.3	7.9	---	---	12.5	12.3	12.0	10.7	12.4	11.0	12.0	11.7
9	9.8	7.9	---	---	12.5	12.3	12.3	12.0	12.4	12.1	12.2	11.8
10	10.3	9.8	---	---	12.6	12.4	12.6	12.4	12.2	12.1	11.8	11.0
11	10.0	9.8	---	---	12.8	12.5	12.8	12.4	12.4	12.1	11.0	10.5
12	10.2	9.5	---	---	12.8	12.3	12.9	12.4	12.4	12.1	10.5	9.8
13	9.9	9.5	---	---	12.5	12.2	12.8	12.4	12.2	12.0	10.1	9.9
14	9.7	9.4	---	---	12.8	11.7	12.5	12.0	12.2	12.0	10.2	10.1
15	9.4	8.9	---	---	13.5	12.9	12.4	12.0	12.1	11.9	---	---
16	9.5	8.9	---	---	13.6	12.1	12.3	12.1	11.9	11.8	10.0	9.8
17	9.8	9.1	---	---	13.3	12.8	12.9	12.3	11.9	11.7	9.9	9.7
18	9.2	8.8	---	---	12.8	12.0	12.4	12.2	11.9	11.7	9.9	9.7
19	9.2	8.8	---	---	12.3	11.9	12.2	12.0	11.9	11.8	9.9	9.5
20	9.5	8.9	---	---	12.3	11.9	11.9	11.7	11.9	11.7	10.2	9.6
21	9.5	9.1	12.0	11.0	12.5	12.1	11.7	11.6	11.9	11.6	10.0	9.7
22	9.5	8.4	11.9	10.9	13.1	12.4	11.7	11.5	13.1	11.4	10.1	9.8
23	8.4	7.6	11.6	10.8	13.1	12.6	11.5	11.4	13.2	12.9	13.5	9.6
24	8.6	7.9	10.9	10.4	13.3	12.5	11.7	11.4	13.3	13.1	13.2	12.8
25	8.8	7.7	11.0	10.6	13.0	12.0	11.8	11.6	13.2	13.1	13.3	12.7
26	8.1	7.1	11.1	10.1	13.4	13.0	11.7	11.1	13.2	13.1	13.3	12.9
27	7.1	6.9	12.2	11.1	13.7	12.8	12.1	11.4	13.2	13.1	13.2	12.7
28	---	---	12.2	11.6	13.3	12.7	12.3	11.2	13.2	13.0	13.2	12.9
29	---	---	11.9	11.5	12.9	12.4	11.1	10.1	---	---	13.1	12.7
30	---	---	11.7	11.3	12.6	12.0	10.2	9.9	---	---	13.1	12.6
31	---	---	---	---	12.6	11.9	10.0	9.5	---	---	13.2	12.3
MONTH	10.3	5.9	12.2	10.1	13.7	11.4	13.0	9.5	13.3	8.3	13.5	9.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	12.4	12.1	8.0	7.3	6.0	4.3	7.1	5.6	8.0	5.5	4.8	3.2
2	12.1	11.9	8.3	7.4	4.8	3.4	5.8	4.7	9.0	6.6	5.5	3.8
3	---	---	8.8	7.7	3.7	3.4	5.4	4.7	6.2	5.0	5.1	4.4
4	11.9	9.2	8.4	7.6	5.3	3.0	5.7	4.2	6.3	3.5	6.7	3.7
5	9.1	8.6	9.4	7.6	5.3	2.5	7.1	4.3	6.6	5.1	6.5	5.7
6	8.8	8.7	8.6	7.8	4.7	2.7	7.7	5.6	6.4	4.4	7.6	5.1
7	9.0	8.6	9.9	7.1	5.5	3.8	8.3	5.3	6.4	4.8	6.1	4.9
8	8.9	8.3	10.7	9.5	4.8	4.0	7.5	5.6	5.3	3.9	5.6	4.5
9	9.0	8.9	9.6	8.7	6.7	3.7	7.7	6.5	5.6	3.7	5.1	4.3
10	9.1	8.9	9.4	8.3	6.9	3.8	7.5	6.0	4.8	3.0	5.1	4.2
11	8.9	8.2	10.1	9.2	7.4	5.1	8.3	5.8	5.9	3.0	4.9	3.8
12	9.4	8.0	10.0	9.1	6.9	6.0	8.7	7.4	5.4	4.3	4.3	2.9
13	9.3	8.4	9.2	7.9	6.0	4.7	8.8	7.1	5.7	4.0	3.5	2.7
14	8.7	6.4	9.8	7.9	7.3	4.3	9.2	6.5	6.5	4.2	4.0	3.1
15	9.1	7.9	10.5	9.5	7.4	5.2	9.8	5.8	6.0	3.7	5.6	3.7
16	8.8	8.2	10.2	9.6	7.3	4.9	8.1	5.5	4.6	3.2	5.4	4.5
17	8.4	8.1	9.7	9.0	7.0	5.6	9.1	5.3	6.8	3.6	5.2	4.7
18	8.3	8.0	10.1	9.2	7.2	5.5	8.8	6.7	6.8	3.9	5.1	3.8
19	9.3	8.0	9.5	8.2	6.5	4.5	8.2	6.1	7.3	5.0	5.8	3.4
20	9.5	8.4	9.2	8.0	7.8	4.0	7.4	4.8	5.3	4.1	6.3	4.5
21	11.5	9.7	8.1	6.3	6.5	4.4	8.0	5.5	7.4	4.9	5.4	4.5
22	12.2	11.3	8.2	7.0	7.3	4.6	8.9	4.4	8.1	5.7	5.2	3.9
23	12.0	10.4	8.3	6.9	8.1	4.8	7.1	5.4	8.6	5.8	5.8	4.2
24	11.4	10.8	7.2	6.2	7.7	5.6	7.7	4.7	7.2	5.5	6.1	4.9
25	10.8	9.9	9.1	6.2	7.2	5.1	6.5	4.4	6.2	5.2	5.8	5.1
26	10.2	9.5	8.8	7.8	6.3	3.7	8.7	5.1	7.3	5.3	6.7	5.2
27	9.6	9.3	7.9	7.0	4.7	3.0	5.6	4.4	6.8	5.8	6.8	6.0
28	9.5	8.7	7.8	6.6	5.1	3.6	6.0	3.6	6.0	4.8	6.9	5.8
29	9.3	8.4	7.8	6.2	6.4	3.7	5.6	4.3	5.8	3.9	7.6	6.6
30	8.5	7.5	7.9	5.9	7.6	5.3	6.2	3.8	5.3	3.8	7.0	6.4
31	---	---	6.7	5.9	---	---	7.7	5.1	4.3	2.9	---	---
MONTH	12.4	6.4	10.7	5.9	8.1	2.5	9.8	3.6	9.0	2.9	7.6	2.7
YEAR	13.7	2.5										

04213000 CONNEAUT CREEK AT CONNEAUT, OH

LOCATION.--Lat 41°55'37", long 80°36'15", Ashtabula County, Hydrologic Unit 04120101, on right bank at downstream side of Keefus Road bridge at Conneaut, and 6.4 mi (10.3 km) upstream from mouth.

DRAINAGE AREA.--175 mi² (453 km²).

PERIOD OF RECORD.--July 1922 to December 1935, March 1950 to September 1961 (published as "at Amboy"), October 1961 to current year.

REVISED RECORDS.--WSP 714: 1926. WSP 784: 1933. WSP 1437: 1923-25(M), 1926-30, 1931-32(M), 1933, 1935(M). WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 610.30 ft (186.019 m) National Geodetic Vertical Datum of 1929, unadjusted. Prior to Aug. 17, 1924, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Water-quality data collected at this site 1965 to 1977. Sediment data collected 1970 to 1974.

AVERAGE DISCHARGE.--41 years, 261 ft³/s (7.392 m³/s), 20.26 in/yr (515 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,000 ft³/s (481 m³/s) Jan. 22, 1959, gage height, 11.70 ft (3.566 m); maximum gage height, 12.94 ft (3.944 m) Mar. 4, 1934 (backwater from ice); minimum discharge, 0.2 ft³/s (0.006 m³/s) July 31, Aug. 1, 1933, Aug. 1, 2, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,900 ft³/s (82.1 m³/s) and maximums (*):

		Discharge		Gage height				Discharge		Gage height	
Date	Time	(ft³/s)	(m³/s)	(ft)	(m)	Date	Time	(ft³/s)	(m³/s)	(ft)	(m)
Nov. 17	1000	3670	104	6.63	2.021	Mar. 16	0300	ice jam		*12.31	3.752
Dec. 15	2000	*9980	283	9.59	2.923	Mar. 22	1800	3220	91.2	6.35	1.936
Mar. 14	---	7000	198	ice jam							

Minimum daily discharge, 5.0 ft³/s (0.14 m³/s) Sept. 7-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	154	51	1570	140	240	90	201	65	47	30	25	7.0
2	466	48	1900	140	220	90	217	60	48	29	18	6.0
3	497	47	508	130	200	90	223	57	41	24	26	6.0
4	279	50	312	130	190	90	720	54	36	20	28	6.5
5	169	56	240	130	180	90	1780	76	35	16	20	6.0
6	123	65	220	130	170	90	1350	106	32	13	14	5.5
7	111	114	200	140	160	90	570	135	33	12	20	5.0
8	107	373	190	800	150	90	415	114	38	11	28	5.0
9	508	312	180	600	140	90	241	135	38	10	18	5.0
10	1820	353	180	450	140	90	179	225	38	9.5	14	5.5
11	636	1520	180	350	130	90	187	221	30	9.0	11	6.0
12	268	1210	170	300	120	90	280	133	28	8.5	25	6.0
13	228	761	180	260	120	500	262	173	32	8.5	20	6.5
14	182	706	500	240	110	3500	156	645	27	8.5	16	8.0
15	141	744	7000	220	110	2500	119	1340	35	8.5	14	22
16	143	1900	5260	210	110	1900	100	1320	28	9.0	22	24
17	114	3220	1400	200	100	1500	88	824	22	13	16	26
18	101	3110	992	190	100	1200	81	1720	28	9.5	12	59
19	98	1580	1280	180	100	1400	83	726	59	8.0	10	108
20	118	992	992	170	95	1600	233	282	79	7.5	13	72
21	132	824	866	160	90	2000	792	340	71	7.0	20	36
22	106	901	532	160	90	3080	560	457	43	7.0	15	26
23	90	457	262	150	90	1860	315	219	33	7.5	10	20
24	81	312	219	160	90	929	185	145	28	12	8.0	15
25	74	275	738	300	90	454	147	122	26	10	7.0	12
26	71	280	1070	700	90	379	124	106	24	8.0	6.5	9.5
27	69	332	308	500	90	1040	101	87	24	10	6.5	9.0
28	66	257	200	400	90	1120	88	74	28	17	6.0	8.5
29	62	223	180	340	---	480	76	64	29	14	6.0	8.5
30	60	282	160	300	---	332	69	60	29	10	7.0	9.0
31	55	---	150	270	---	235	---	52	---	40	8.5	---
TOTAL	7129	21355	26159	8550	3605	27089	9942	10137	1089	407.0	470.5	548.5
MEAN	230	712	908	276	129	874	331	327	36.3	13.1	15.2	18.3
MAX	1820	3220	7000	800	240	3500	1780	1720	79	40	28	108
MIN	55	47	150	130	90	90	69	52	22	7.0	6.0	5.0
CFSM	1.31	4.07	5.19	1.58	.74	4.99	1.89	1.87	.21	.08	.09	.11
IN.	1.52	4.54	5.99	1.82	.77	5.76	2.11	2.15	.23	.09	.10	.12

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CAL YR 1977  TOTAL  163623.0   MEAN 448   MAX  7000   MIN 13    CFSM 2.56   IN 34.78
WTR YR 1978  TOTAL  118481.0   MEAN 325   MAX  7000   MIN  5.0  CFSM 1.86   IN 25.19
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CREST-STAGE PARTIAL-RECORD STATIONS

The following table contains annual maximum discharge for crest-stage stations. A crest-stage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, and discharge measurements may have been made for purposes of establishing the stage-discharge relation, but these are not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1978

Station No.	Station name	Location	Drainage area (mi²)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (ft³/s)
		Streams tributary to Lake Erie					
04176900	Hill Ditch near Richards, OH	Lat 41°39'54", long 83°40'05", Lucas County, Hydrologic Unit 04100001, at culvert on U.S. Highway 20, 1.4 mi west of Richards, 0.8 mi north of intersection of U.S. Highway 20 and State Highway 246.	*3.52	1947-78	8-18-78	13.67	325
04183750	Middle Fork Gordon Creek tributary at Hicksville,OH	Lat 41°18'58", long 84°46'00", Defiance County, Hydrologic Unit 04100005, at culvert on Hicksville-Edgerton Road, 0.16 mi south of Middle Gordon Creek, 0.89 mi north of Hicksville.	.34	1978	10-1-77	96.19	24.5
04184750	Spring Creek at Fayette, OH	Lat 41°40'32", long 84°19'47", Fulton County, Hydrologic Unit 04100006, at Culvert on Gorham Street 800 ft north of U.S. Highway 20 in Fayette.	2.58	1978	6-27-78	97.70	290
04184760	Bean Creek tributary near Fayette, OH	Lat 41°39'08", long 84°17'34", Fulton County, Hydrologic Unit 04100006, at culvert on Fulton County Highway N, 1.5 mi south of U. S. Highway 20, and 2.3 mi southeast of Fayette.	.56	1978	6-27-78	100.47	51
04185150	Beaver Creek near Montpelier, OH	Lat. 41°34'19", long 84°31'03", Williams County, Hydrologic Unit 04100006 on Williams County Road K, 2 mi east of State Highway 15, and 4.7 mi east of Montpelier.	.40	1978	12-18-77	97.32	60
04185945	Auglaize River tributary near Spencerville, OH	Lat. 40°42'27", long 84°19'06", Allen County, Hydrologic Unit 04100007, at culvert on State Highway 117, 1.8 mi east of Spencerville at Monfort road.	.51	1978	12-18-77	97.39	56
04186800	King Run near Harrod, OH	Lat 40°43'57", long 83°53'47", Allen County, Hydrologic Unit 04100007, at culvert on State Route 309, 0.9 mi west of Allen-Hardin County line, 2.2 mi northeast of Harrod.	.53	1966-78	5-13-78	20.80	103
04187950	Rattlesnake Creek at Cairo, OH	Lat 40°49'45", long 84°05'31", Allen County, Hydrologic Unit 04100007, at culvert on State Route 65, 0.4 mi north of U.S. Highway 30 at Cairo.	2.65	1978	12-18-77	95.24	a145
04190350	Little Auglaize River tributary at Ottoville, OH	Lat. 40°55'05", long 84°20'47", Putnam County, Hydrologic Unit 04100007, at culvert on State Highway 66, 1.0 mi south of Ottoville.	1.04	1978	4-6-78	98.42	a70

CREST-STAGE PARTIAL-RECORD STATIONS--Continued

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Date	Gage height (feet)	Discharge (ft^3/s)
		Streams tributary to Lake Erie--Continued					
04191480	Beetree Run near Junction, OH	Lat. 41°13'26", long 84°24'33 Defiance County, Hydrologic Unit 04100007, at culvert on private drive from Bowman Road 12, near Sponseller Road 158, 3.2 mi northeast of junction.	1.66	1978	12-15-77	100.20	a45
04192900	Reitz Run at Waterville, OH	Lat 41°29'50", long 83°42'35", Wood County, Hydrologic Unit 04100009. at culvert on State Highways 64 and 65, 0.1 mi upstream from mouth, 0.5 mi southeast of Waterville.	1.06	1966-78	6-26-78	20.09	102
04198100	Norwalk Creek near Norwalk, OH	Lat 41°13'58", long 82°32'28", Huron County, Hydrologic Unit 04100012, at bridge on county road, 300 feet south of junction of State Highways 601 and 18, 4 miles southeast of Norwalk, 6 miles upstream from mouth.	4.92	1947-78	3-15-78	14.49	580
04199800	Neff Run near Litchfield, OH	Lat 41°12'33", long 82°01'26", Lorain County, Hydrologic Unit 041100001, at culvert on State Highway 83, 0.7 mile north of county line, 2.8 miles north of Litchfield.	.76	1966-78	12-15-77	19.89	110
04212600	Hubbard Run tributary at Ashtabula, OH	Lat 41°50'38", long 80°46'42", Ashtabula county, Hydrologic Unit 041100003, at culvert on Seven Hills Road, 0.5 mile upstream from mouth, 1.6 miles south of center of Ashtabula.	.88	1966-78	12-14-77	*16.44	105

* Revised
a Estimated

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1978

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft³/s)
		STREAMS TRIBUTARY TO LAKE ERIE				
04186000 Miami and Erie Canal	Jennings Creek	Lat 40°51'35", long 84°20'25", on Van Wert-Putnam County Line, Hydrologic Unit 04100007 at bridge on Pohlman Road, 0.9 mi (1.4 km) north of Delphos.	- - -	1928-33≠, 1934-35, 1945-77	05-16-78 07-14-78	0.37 .04
04194000 Swan Creek	Maumee River	Lat 41°37'37", long 83°35'40", Lucas County, Hydrologic Unit 04100009, at bridge on Detroit Avenue in Toledo.	199	1945-48≠, 1974-77	12-02-77 12-30-77 02-22-78 04-25-78 05-29-78 06-29-78	482 142 57.6 392 174 1280

≠ Operated as a continuous-record gaging station.

The following tables contain water-level and chemical quality data for network observation wells. The wells were pumped in order to get water samples representative of the aquifer. In addition, chemical quality data for a selected number of water-supply wells is given.

AUGLAIZE COUNTY

403403084125700. Local number, AU-11.
LOCATION.--Lat 40°34'03", long 84°12'57", Hydrologic Unit 04100007, 0.2 mi (0.3 km) northwest of fairground in Wapakoneta.
Owner: City of Wapakoneta.
AQUIFER.--Limestone and dolomite of Silurian Age.
WELL CHARACTERISTICS.--Drilled public supply artesian well, diameter 12 in (0.30 m), depth 268 ft (81.7 m), cased to 111 ft (33.8 m).
PERIOD OF RECORD.--June 1967 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	FLOW RATE (GPM)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA)	MAGNE-SIUM, TOTAL RECOV-ERABLE (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	ALKA-LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)
NOV												
02...	600	920	7.4	13.0	10	100	40	28	398	0	330	25
JUN												
26...	600	946	7.6	--	9	110	47	30	410	0	340	16

DATE	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)
NOV												
02...	150	16	588	.05	.00	.05	.56	.02	<10	1800	2	20
JUN												
26...	160	18	636	.00	.01	.01	.53	.01	10	1800	5	30

HANCOCK COUNTY

405332083421700. Local number, HA-15.

LOCATION.--Lat 40°53'32", long 83°42'17", Hydrologic Unit 04100008, 1.3 mi (2.1 km) southeast of Jenera. Owner: Edgar Wilson.

AQUIFER.--Limestone of Silurian Age.

WELL CHARACTERISTICS.--Drilled test artesian well, diameter 12 in (0.3 m), depth drilled 280 ft (85.3 m), present depth 278 ft (84.7 m), cased to 7 ft (2.1 m).

DATUM.--Altitude of land-surface datum is 850 ft (259 m), from topographic map. Measuring point: Floor of instrument shelter 3.00 ft (0.914 m) above land-surface datum.

PERIOD OF RECORD.--October 1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily low, 3.47 ft (1.058 m) Jan. 12, 1977; minimum daily low, 0.82 ft (0.250 m) above land-surface datum Mar. 15, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum daily low, 2.99 ft (0.911 m) Sept. 28-30; minimum daily low, 0.82 ft (0.250 m) above land-surface datum Mar. 15.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.14	1.28	1.03	.86	.43	1.13	-0.18	.57	1.02	1.59	2.01	2.43
2	1.17	1.29	1.05	.90	.43	1.12	-0.10	.61	1.06	1.53	2.03	2.43
3	1.19	1.29	1.06	.98	.45	1.06	-0.21	.62	1.08	1.26	2.05	2.45
4	1.21	1.33	1.08	.98	.46	1.13	-0.27	.59	1.09	1.29	2.09	2.49
5	1.21	1.32	.99	.98	.47	1.13	-0.23	.69	1.15	1.32	2.10	2.51
6	1.24	1.29	1.03	.98	.47	1.16	-0.25	.79	1.16	1.31	2.12	2.53
7	1.25	1.26	1.05	.98	.47	1.17	-0.39	.78	1.12	1.31	2.11	2.55
8	1.15	1.30	1.02	.87	.54	1.13	-0.30	.70	1.16	1.34	2.10	2.58
9	1.04	1.29	1.05	.79	.92	1.11	-0.27	.75	1.22	1.34	2.11	2.61
10	1.07	1.27	1.04	.77	.92	1.07	-0.31	.80	1.23	1.38	1.99	2.63
11	1.08	1.34	1.02	.63	.92	1.07	-0.28	.82	1.25	1.42	2.01	2.64
12	1.15	1.39	.96	.72	.95	1.07	-0.22	.79	1.26	1.43	2.03	2.68
13	1.16	1.40	.94	.81	.95	1.00	-0.07	.69	1.29	1.42	2.08	2.69
14	1.15	1.37	.33	.87	.98	.44	.01	.74	1.31	1.45	2.11	2.64
15	1.11	1.30	-0.38	.96	1.00	-0.82	.07	.78	1.32	1.46	2.10	2.67
16	1.13	1.26	-0.22	.99	1.00	-0.62	.12	.81	1.32	1.51	2.12	2.66
17	1.15	1.24	-0.14	.97	1.00	-0.31	.17	.83	1.34	1.57	2.17	2.70
18	1.12	1.32	.01	1.04	1.00	-0.18	.13	.85	1.34	1.61	2.18	2.74
19	1.19	1.34	.19	1.02	1.00	-0.03	-0.15	.88	1.38	1.65	2.24	2.76
20	1.22	1.30	.37	.99	1.01	.01	-0.27	.85	1.38	1.67	2.28	2.76
21	1.23	1.35	.52	1.07	1.04	-0.18	-0.16	.89	1.41	1.69	2.29	2.83
22	1.25	1.33	.63	1.09	1.06	-0.18	-0.05	.88	1.44	1.72	2.30	2.89
23	1.25	1.28	.67	1.08	1.04	-0.13	-0.02	.85	1.47	1.76	2.31	2.90
24	1.26	1.29	.66	1.04	1.01	-0.05	.06	.84	1.48	1.78	2.33	2.88
25	1.25	1.24	.63	.93	1.08	-0.06	.14	.87	1.48	1.77	2.36	2.91
26	1.23	1.28	.71	.58	1.12	-0.19	.23	.89	1.48	1.77	2.38	2.94
27	1.24	1.28	.79	.47	1.12	-0.40	.30	.90	1.51	1.83	2.39	2.95
28	1.28	1.38	.81	.46	1.09	-0.37	.36	.90	1.54	1.89	2.35	2.99
29	1.28	1.38	.82	.45	---	-0.28	.41	.90	1.56	1.90	2.40	2.99
30	1.28	1.29	.86	.44	---	-0.22	.48	.94	1.58	1.93	2.42	2.99
31	1.28	---	.89	.43	---	-0.26	---	.99	---	1.95	2.40	---
MAX	1.28	1.38	1.08	1.09	1.12	1.17	.48	.99	1.58	1.95	2.42	2.99

WTR YR 1978 MEAN 1.15 LOW 2.99 HIGH -0.82

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	HYDRO-GEN SULFIDE TOTAL (MG/L AS H2S)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
JUN 14...	1640	2500	7.4	11.0	9.9	1600	1300	380	150	57	4.8

DATE	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	ALKA-LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)
JUN 14...	348	0	285	22	1200	72	1.5	11	2310	2050	.00

DATE	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)
JUN 14...	.52	.06	.58	.58	2.6	.00	.00	260	30	4.3

HENRY COUNTY

412123083574000. Local number, HY-2.

LOCATION.--Lat 41°21'23", long 83°57'40", Hydrologic Unit 04100009, 1.4 mi (2.3 km) southwest of McClure.
Owner: State of Ohio.

AQUIFER.--Limestone of Silurian Age.

WELL CHARACTERISTICS.--Drilled test artesian well, diameter 12 in (0.3 m), depth 300 ft (91.4 m), cased to 43 ft (13.1 m).

DATUM.--Altitude of land-surface datum is 680 ft (207 m), from topographic map. Measuring point: Floor of instrument shelter 3.00 ft (0.914 m) above land-surface datum.

PERIOD OF RECORD.--June 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily low, 22.60 ft (6.888 m) Feb. 7, 1975; minimum daily low, 14.55 ft (4.435 m) Mar. 22, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum daily low, 21.11 ft (6.434 m) Aug 21; minimum daily low, 14.55 ft (4.435 m) Mar. 22.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.82	19.00	19.21	18.60	18.57	19.12	16.37	18.71	19.02	18.91	20.52	20.60
2	19.68	18.95	18.93	18.78	18.87	19.15	16.61	18.76	19.08	18.89	20.43	20.62
3	19.63	19.01	18.74	18.95	19.11	19.21	16.83	18.80	19.15	18.91	20.48	20.53
4	19.57	19.30	18.64	18.98	19.18	19.43	17.17	18.70	19.08	18.84	20.57	20.55
5	19.46	19.40	18.50	19.17	19.24	19.52	17.35	18.78	19.37	18.76	20.66	20.54
6	19.60	19.44	18.37	19.02	19.34	19.66	17.37	19.15	19.69	18.84	20.61	20.51
7	19.71	19.47	18.78	18.83	19.39	19.80	17.60	19.06	19.86	18.88	20.55	20.49
8	19.54	19.39	18.82	18.52	19.39	19.73	17.76	19.03	20.16	18.95	20.44	20.49
9	19.43	19.28	19.08	18.54	19.22	19.68	17.82	19.35	20.47	18.99	20.19	20.54
10	19.40	19.03	19.20	18.89	18.97	19.55	17.69	19.36	20.59	19.29	19.82	20.54
11	19.30	18.99	19.31	19.00	18.74	19.38	17.69	19.29	20.66	19.60	19.61	20.50
12	19.35	19.20	19.27	19.03	18.63	19.16	17.67	19.10	20.70	19.74	19.63	20.48
13	19.38	19.18	19.06	19.02	18.51	19.12	17.72	18.87	20.79	19.91	19.68	20.50
14	19.29	19.06	18.72	19.11	18.52	18.65	17.97	18.86	20.78	20.05	19.74	20.42
15	19.13	19.06	18.50	19.12	18.71	18.55	18.17	18.91	20.75	20.02	19.83	20.46
16	19.14	19.16	18.28	19.23	18.54	17.80	18.27	19.01	20.64	19.99	20.16	20.32
17	19.09	19.31	18.08	19.19	18.52	16.55	18.58	19.00	20.59	20.24	20.47	20.15
18	19.06	19.57	17.72	19.22	18.47	15.74	18.62	19.04	20.56	20.48	20.62	20.08
19	19.39	19.71	17.56	19.10	18.40	15.29	18.50	18.90	20.60	20.01	20.90	20.01
20	19.61	19.69	17.36	18.78	18.58	15.14	18.41	18.87	20.56	19.75	21.04	19.91
21	19.70	19.77	17.46	18.69	18.85	14.66	18.41	19.01	20.59	19.75	21.11	19.84
22	19.93	19.80	17.50	18.63	19.01	14.55	18.33	19.03	20.56	19.88	21.02	19.82
23	19.98	19.77	17.55	18.58	19.03	14.86	18.18	18.81	20.54	20.04	20.88	19.69
24	19.97	19.75	17.54	18.43	19.07	15.30	18.05	18.56	20.50	20.14	20.75	19.44
25	19.83	19.70	17.59	18.17	18.89	15.56	18.21	18.49	20.43	20.14	20.71	19.27
26	19.51	19.58	17.60	17.81	18.90	15.77	18.37	18.66	20.31	20.14	20.70	19.20
27	19.36	19.65	17.96	17.86	18.87	15.73	18.46	18.71	19.78	20.25	20.63	19.52
28	19.29	19.79	18.14	18.19	18.78	15.41	18.54	18.78	19.29	20.37	20.52	19.82
29	19.26	19.85	18.28	18.25	---	15.65	18.59	18.83	19.04	20.49	20.58	19.94
30	19.18	19.74	18.49	18.28	---	15.98	18.63	18.89	18.87	20.76	20.60	20.02
31	19.09	---	18.64	18.43	---	15.95	---	19.00	---	20.48	20.58	---
MAX	19.98	19.85	19.31	19.23	19.39	19.80	18.63	19.36	20.79	20.76	21.11	20.62

WTR YR 1978 MEAN 19.13 HIGH 14.55 LOW 21.11

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HYDROGEN SULFIDE TOTAL (MG/L AS H2S)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)
JUN 21...	1300	2650	7.8	11.5	26	1400	1200	288	165	70	6.4

DATE	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	ALKALINITY (MG/L AS CACO3)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)
JUN 21...	280	0	230	7.1	1100	120	1.7	6.4	2110	1900	.00

DATE	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	CARBON, ORGANIC DISSOLVED (MG/L AS C)
JUN 21...	.75	.25	1.0	1.0	4.4	.00	.00	240	40	10

LORAIN COUNTY

411545082072400. Local number, LN-1.

LOCATION.--Lat 41°15'45", long 82°07'24", Hydrologic Unit 04110001, 1.7 mi (2.7 km) north of LaGrange.
Owner: LaGrange Water Department.

AQUIFER.--Sandstone of Mississippian Age.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 6 in (0.15 m), depth 47 ft (14.3 m), cased.

DATUM.--Altitude of land-surface datum is 795 ft (242 m), from topographic map. Measuring point: Floor of instrument shelter 1.50 ft (0.457 m) above land-surface datum.

PERIOD OF RECORD.--September 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily low, 35.60 ft (10.851 m) Oct. 25, 1952; minimum daily low, 0.13 ft (0.040 m) Jan. 8, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum daily low, 6.64 ft (2.024 m) Nov. 5; minimum daily low, 0.95 ft (0.290 m) Apr. 11.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.79	6.40	3.80	2.35	2.22	2.93	1.20	1.44	1.41	2.11	2.98	3.50
2	6.03	6.40	3.78	2.46	2.20	2.96	1.59	1.53	1.48	2.00	2.99	3.48
3	6.09	6.40	3.62	2.80	2.30	2.57	1.49	1.55	1.54	1.94	3.06	3.40
4	6.15	6.63	3.52	2.80	2.33	2.82	1.31	1.45	1.53	2.09	3.21	3.51
5	6.11	6.64	3.33	2.75	2.31	2.90	1.41	1.61	1.65	2.14	3.20	3.54
6	6.23	6.50	3.03	2.72	2.31	2.89	1.29	1.93	1.67	2.12	3.17	3.57
7	6.28	6.32	3.25	2.74	2.31	2.90	1.19	1.93	2.24	2.05	3.12	3.56
8	6.06	6.22	3.25	2.47	2.36	2.90	1.32	1.58	1.88	2.02	3.09	3.60
9	5.92	6.23	3.07	2.31	2.34	2.90	1.30	1.57	2.05	2.03	2.96	3.76
10	6.11	5.98	3.21	2.58	2.26	2.55	1.01	1.78	2.11	2.11	2.80	3.77
11	6.06	6.09	3.13	2.59	2.23	2.58	.95	1.79	2.06	2.22	2.68	3.73
12	6.19	6.26	2.92	2.44	2.28	2.84	1.06	1.60	2.01	2.28	2.56	3.85
13	6.31	6.29	2.59	2.11	2.28	2.85	1.35	1.24	2.18	2.16	2.57	3.94
14	6.26	6.15	2.35	1.86	2.41	2.32	1.48	1.34	2.26	2.19	2.59	3.92
15	6.04	5.78	2.34	2.08	2.53	2.45	1.59	1.40	2.25	2.18	2.54	3.96
16	6.07	5.49	2.25	2.22	2.55	2.40	1.64	1.46	2.18	2.26	2.47	3.90
17	6.14	5.33	2.06	2.21	2.57	2.25	1.62	1.45	2.10	2.43	2.61	3.99
18	6.00	5.42	1.87	2.27	2.56	2.32	1.53	1.51	2.06	2.53	2.64	4.11
19	6.21	5.48	1.94	2.26	2.53	2.13	1.16	1.54	2.11	2.57	2.78	4.24
20	6.48	5.36	1.85	2.02	2.52	2.13	1.19	1.41	2.11	2.57	2.96	4.20
21	6.40	5.16	1.79	2.28	2.55	1.66	1.44	1.54	2.09	2.60	2.99	4.33
22	6.52	5.20	1.99	2.40	2.65	1.71	1.53	1.52	2.17	2.65	2.95	4.59
23	6.61	4.91	1.95	2.43	2.62	1.69	1.47	1.34	2.22	2.72	2.96	4.63
24	6.54	4.72	1.96	2.24	2.52	1.84	1.30	1.32	2.22	2.77	2.92	4.46
25	6.49	4.67	1.89	1.81	2.60	1.67	1.24	1.38	2.17	2.70	2.99	4.54
26	6.30	4.49	1.99	1.47	2.85	1.37	1.22	1.44	2.11	2.58	3.04	4.58
27	6.29	4.63	2.24	2.02	2.86	1.29	1.26	1.38	2.15	2.59	3.05	4.44
28	6.40	4.87	2.27	2.08	2.86	1.29	1.30	1.28	2.23	2.78	2.98	4.68
29	6.40	4.90	2.25	2.18	---	1.53	1.25	1.22	2.16	2.72	3.21	4.69
30	6.40	4.62	2.38	2.24	---	1.54	1.33	1.23	2.12	2.79	3.31	4.59
31	6.40	---	2.49	2.18	---	1.33	---	1.37	---	2.85	3.39	---
MAX	6.61	6.64	3.80	2.80	2.86	2.96	1.64	1.93	2.26	2.85	3.39	4.69

WTR YR 1978 MEAN 2.97 HIGH .95 LOW 6.64

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HYDRO- GEN SULFIDE TOTAL (MG/L AS H2S)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
JUN 07...	1115	990	7.8	11.0	.2	280	0	41	42	120	4.6

DATE	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	ALKA- LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)
JUN 07...	590	0	484	15	10	42	.3	13	549	564	.01

DATE	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)
JUN 07...	.88	.22	1.1	1.1	4.9	.02	.00	600	20	6.8

LUCAS COUNTY

413704083362200. Local number, LU-1.
LOCATION.--Lat 41°37'04", long 83°36'22", Hydrologic Unit 04100001, at Toledo State Hospital.
   Owner: State of Ohio.
AQUIFER.--Limestone of Silurian Age.
WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 12 in (0.3 m), depth drilled 525 ft (160.0 m), present depth 523.0 ft (159.4 m), cased to 93 ft (28.3 m). depth drilled 525 ft (160.0 m), cased.
DATUM.--Altitude of land-surface datum is 624 ft (190 m), from topographic map. Measuring point: Floor of instrument shelter 3.00 ft (0.914 m) above land-surface datum.
REMARKS.--Prior to Aug. 23, 1978, measuring point was 3.10 ft (0.945 m) above land-surface datum.
PERIOD OF RECORD.--March 1946 to current year.
EXTREMES FOR PERIOD OF RECORD.--Maximum daily low, 117.25 ft (35.738 m) Sept. 10, 1957; minimum daily low, 74.90 ft (22.83 m) May 13, 1978.
EXTREMES FOR CURRENT YEAR.--Maximum daily low, 80.19 ft (24.44 m) Oct. 3; minimum daily low, 74.90 ft (22.83 m) May 13.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79.91	78.95	77.76	77.55	77.46	76.95	76.02	75.60	76.46	77.40	78.01	78.40
2	80.14	78.91	77.91	77.58	77.49	76.93	76.42	75.62	76.47	77.48	78.02	78.15
3	80.19	78.85	77.97	77.87	77.63	76.46	76.30	75.57	76.74	77.70	78.19	78.23
4	80.17	79.07	78.10	77.82	77.66	76.73	76.09	75.30	76.76	77.80	78.33	78.16
5	80.06	79.03	77.86	77.73	77.33	76.79	76.26	75.44	76.58	77.76	78.32	78.09
6	80.12	78.79	77.91	77.63	77.34	76.80	76.12	75.78	76.89	77.61	78.31	78.06
7	80.14	78.54	78.24	77.54	77.32	77.02	76.09	75.79	77.15	77.58	78.25	78.05
8	79.59	78.53	78.24	77.15	77.35	76.90	76.22	75.29	77.18	77.61	78.25	78.19
9	79.59	78.52	78.37	77.32	77.30	76.69	76.19	75.35	76.97	77.75	78.11	78.20
10	79.68	78.31	78.53	77.78	77.13	76.32	75.84	75.52	76.90	77.76	78.15	78.13
11	79.51	78.65	78.54	77.82	76.98	76.32	75.58	75.49	76.85	77.55	78.17	78.11
12	79.75	78.97	78.25	77.74	76.98	76.59	75.63	75.21	76.80	77.53	78.12	78.23
13	79.81	79.02	77.93	77.45	76.89	76.64	75.91	74.90	76.97	77.43	78.12	78.29
14	79.66	78.84	77.80	77.30	76.94	76.19	76.03	75.06	77.12	77.43	78.06	78.25
15	79.32	78.43	77.87	77.51	76.99	76.48	76.08	75.22	77.19	77.50	77.89	78.19
16	79.39	78.16	77.79	77.62	77.00	76.47	76.12	75.29	77.08	77.56	77.75	78.15
17	79.36	78.11	77.66	77.59	77.02	76.54	76.02	75.41	76.88	77.57	77.92	78.24
18	78.98	78.56	77.55	77.65	76.95	76.66	75.67	75.52	76.84	77.51	77.92	78.47
19	79.31	78.74	77.65	77.62	76.85	76.56	75.27	75.44	77.02	77.48	78.17	78.49
20	79.42	78.61	77.44	77.33	76.77	76.59	75.38	75.55	77.01	77.57	78.36	78.39
21	79.41	78.73	77.44	77.56	76.80	76.17	75.77	75.54	77.14	77.75	78.40	78.80
22	79.52	78.76	77.68	77.68	76.86	76.22	75.90	75.38	77.36	77.67	78.32	78.88
23	79.54	78.47	77.61	77.66	76.71	76.37	75.80*	75.25	77.33	77.50	78.31	78.86
24	79.42	78.35	77.61	77.41	76.56	76.68	75.75	75.34	77.35	77.62	78.33	78.52
25	79.28	78.25	77.56	76.91	76.68	76.53	75.73	75.42	77.27	77.86	78.35	78.48
26	79.01	78.18	77.59	76.38	76.88	76.16	75.72	75.41	77.38	77.78	78.21	78.37
27	79.03	78.23	77.86	76.99	76.93	76.10	75.72	75.46	77.62	77.90	78.20	78.05
28	79.18	78.67	77.86	77.14	76.76	76.09	75.70	75.56	77.64	77.87	78.33	78.12
29	79.21	78.70	77.74	77.32	---	76.43	75.56	75.89	77.64	77.95	78.50	77.09
30	79.15	78.42	77.77	77.41	---	76.45	75.57	76.05	77.59	---	78.52	77.64
31	79.03	---	77.88	77.41	---	76.25	---	76.30	---	---	78.52	---
MAX	80.19	79.07	78.54	77.87	77.66	77.02	76.42	76.30	77.64	77.95	78.52	78.88

WTR YR 1978   MEAN 77.47   HIGH 74.90   LOW 80.19

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HYDROGEN SULFIDE TOTAL (MG/L AS H2S)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)
JUN 22...	1215	1150	7.8	11.5	4.3	450	260	112	41	60	2.7

DATE	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	ALKALINITY (MG/L AS CACO3)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)
JUN 22...	236	0	194	6.0	380	24	1.4	7.7	765	725	.01

DATE	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	CARBON, ORGANIC DISSOLVED (MG/L AS C)
JUN 22...	.19	.00	.19	.20	.90	.00	.00	210	80	5.6

SANDUSKY COUNTY

411914083045300. Local number, S-3.

LOCATION.--Lat 41°19'14", long 83°04'53", Hydrologic Unit 04100011, 2.6 mi (4.2 km) southeast of Fremont Post Office.

Owner: State of Ohio.

AQUIFER.--Limestone of Silurian Age.

WELL CHARACTERISTICS.--Drilled test artesian well, diameter 12 in (0.30 m), depth 121 ft (36.9 m), cased to 93 ft (28.3 m).

DATUM.--Altitude of land-surface datum is 627 ft (191 m), from topographic map. Measuring point: Floor of instrument shelter 3.00 ft (0.914 m) above land-surface datum.

PERIOD OF RECORD.--December 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily low, 24.18 ft (7.370 m) Aug. 2, 1975; minimum daily low, 14.02 ft (4.273 m) Mar. 24, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum daily low, 23.70 ft (7.224 m) Sept. 10; minimum daily low, 14.91 ft (4.545m) Apr. 20.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.36	16.91	16.81	15.94	15.63	16.02	15.55	15.28	15.79	18.66	20.32	19.61
2	17.48	16.89	16.86	15.89	15.78	16.01	15.72	15.30	15.79	18.28	19.89	19.38
3	17.55	16.86	16.87	16.03	15.87	15.79	15.59	15.28	15.82	17.84	19.45	19.08
4	17.57	17.23	16.99	16.00	15.83	15.97	15.58	15.16	15.76	17.76	19.18	18.95
5	17.52	17.36	16.99	15.92	15.78	16.02	15.60	15.15	15.82	17.66	19.01	20.03
6	18.70	17.37	17.09	15.86	15.69	16.19	15.50	15.40	15.88	17.52	18.75	21.51
7	20.19	17.37	17.31	15.81	15.67	16.18	15.41	15.43	17.06	17.36	18.57	22.44
8	20.46	18.09	17.32	15.66	15.70	16.14	15.51	15.19	18.57	17.20	19.64	23.07
9	19.36	19.59	17.05	15.65	15.67	16.01	15.47	15.16	19.25	17.13	20.54	23.57
10	18.77	18.89	17.16	15.88	15.56	15.84	15.23	15.35	18.32	17.03	19.65	23.70
11	18.40	18.20	17.13	15.97	15.53	15.80	15.13	15.37	17.44	18.32	18.98	22.08
12	18.13	17.97	16.95	15.90	15.53	15.92	15.18	15.29	17.04	19.74	18.61	21.07
13	18.08	17.92	16.75	15.72	15.77	15.96	15.31	15.11	16.84	20.57	18.38	20.51
14	17.91	17.70	16.55	15.65	15.58	15.58	15.38	15.19	16.73	21.22	18.30	20.06
15	17.63	17.41	16.51	15.73	15.70	15.74	15.41	15.30	16.63	21.41	18.13	19.67
16	17.59	17.23	16.44	15.84	15.66	15.77	15.43	15.35	16.52	19.86	17.91	19.35
17	17.56	17.09	16.36	15.81	15.70	15.93	15.40	15.39	17.82	19.08	19.14	19.15
18	17.30	17.27	16.26	15.85	15.72	16.00	15.27	15.47	18.68	18.98	20.60	19.01
19	17.34	17.40	16.32	15.81	15.78	15.96	14.93	15.55	18.54	20.74	21.59	18.93
20	17.43	17.37	16.18	15.64	15.87	15.96	14.91	15.50	19.83	21.71	22.24	18.78
21	17.40	17.35	16.17	15.80	15.89	15.76	15.07	15.59	20.58	22.33	22.70	18.61
22	17.38	17.40	16.23	15.86	15.98	15.79	15.22	15.58	19.80	22.48	22.82	18.63
23	17.39	17.28	16.18	15.87	15.94	15.80	15.17	15.46	19.96	21.11	21.24	18.61
24	17.34	17.16	16.18	15.74	15.81	15.97	15.16	15.45	21.07	20.29	20.30	18.40
25	17.30	17.16	16.04	15.48	15.87	15.86	15.12	15.53	21.62	19.68	19.90	18.33
26	17.11	17.04	16.09	14.96	15.97	15.66	15.11	15.62	21.87	19.26	21.65	18.68
27	17.06	17.19	16.17	15.03	16.01	15.60	15.11	15.68	22.02	18.89	22.50	18.33
28	17.04	17.45	16.22	15.50	15.99	15.58	15.10	15.64	20.62	20.18	22.62	20.04
29	17.07	17.54	16.18	15.58	---	15.75	15.08	15.71	19.67	21.47	21.16	21.27
30	17.04	17.36	16.03	15.62	---	15.75	15.21	15.73	19.06	22.11	20.44	21.44
31	16.99	---	16.11	15.62	---	15.56	---	15.72	---	21.39	19.92	---
MAX	20.46	19.59	17.32	16.03	16.01	16.19	15.72	15.73	22.02	22.48	22.82	23.70

WTR YR 1978 MEAN 17.35 HIGH 14.91 LOW 23.70

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	HYDRO-GEN SULFIDE TOTAL (MG/L AS H2S)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
JUN 06...	1530	1700	7.4	11.0	.2	960	770	250	82	39	2.8

DATE	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	ALKA-LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)
JUN 06...	230	0	189	15	840	13	1.5	14	1460	1360	.00

DATE	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)
JUN 06...	.37	.03	.40	.40	1.8	.00	.00	0	20	7.6

WILLIAMS COUNTY

412853084322000. Local number, WM-10.

LOCATION.--Lat 41°28'53", long 84°32'20", Hydrologic Unit 04100006, 0.9 mi (1.4 km) northeast of city hall in Bryan.

Owner: City of Bryan.

AQUIFER.--Sand and gravel of Pleistocene Age.

WELL CHARACTERISTICS.--Drilled public supply artesian well, 12 in (0.30 m), depth 147 ft (44.8 m), screened below 115 ft (35.1 m).

PERIOD OF RECORD.--1967 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	ALKA- LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)
NOV											
29...	650	7.9	17	58	38	29	398	0	330	8.0	33

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)
NOV											
29...	9.8	376	.01	.00	.01	.40	.02	<10	540	7	18

WILLIAMS COUNTY--Continued

413108084415300. Local number, WM-12.

LOCATION.--Lat 41°31'08", long 84°41'53", Hydrologic Unit 04100003, 1.7 mi (2.7 km) east of Blakeslee. Owner: State of Ohio.

AQUIFER.--Sand and gravel of Pleistocene Age.

WELL CHARACTERISTICS.--Drilled test artesian well, diameter 10 in (0.25 m), depth 115 ft (35.1 m), cased to 115 ft (35.1 m), screened 85 ft to 115 ft (25.9 m to 35.1 m).

DATUM.--Altitude of land-surface datum is 830 ft (253 m), from topographic map. Measuring point: Floor of instrument shelter 1.50 ft (0.457 m) above land-surface datum.

PERIOD OF RECORD.--1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily low, 10.56 ft (3.219 m) Feb. 6-7, 1977; minimum daily low, 4.94 ft (1.506 m) Mar. 24, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum daily low, 10.12 ft (3.085 m) Sept. 28-29; minimum daily low, 4.94 ft (1.506 m) Mar. 24.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.67	9.94	9.17	7.79	9.11	9.35	5.39	7.78	8.69	6.55	9.38	9.96
2	9.77	9.94	8.91	7.97	9.13	9.34	5.62	7.80	8.77	6.48	9.38	9.93
3	9.80	9.97	8.68	8.19	9.17	9.22	5.57	7.85	8.81	6.51	9.50	9.94
4	9.79	10.04	8.71	8.21	9.17	9.34	5.54	7.82	8.80	6.70	9.54	9.98
5	9.77	10.00	8.67	8.24	9.06	9.36	5.50	8.04	8.89	6.75	9.54	9.98
6	9.88	9.92	8.93	8.27	9.11	9.40	5.33	8.21	8.91	6.90	9.56	9.99
7	9.88	9.86	9.05	8.32	9.12	9.44	5.01	8.21	8.88	7.10	9.55	10.00
8	9.62	9.94	9.03	8.27	9.12	9.36	5.04	8.07	8.94	7.40	9.36	10.01
9	9.75	9.98	9.17	8.44	9.10	9.31	5.05	8.14	9.01	7.60	9.33	10.06
10	9.78	9.89	9.21	8.67	9.06	9.24	4.99	8.25	9.05	7.88	9.40	10.05
11	9.75	10.02	9.19	8.70	9.06	9.25	5.05	8.25	9.01	8.04	9.45	10.03
12	9.88	10.08	9.05	8.67	9.09	9.36	5.21	8.17	9.11	8.10	9.48	10.08
13	9.89	10.06	8.98	8.57	9.06	9.34	5.55	8.02	9.17	8.20	9.55	10.08
14	9.82	9.93	8.83	8.60	9.15	8.87	5.83	7.99	9.21	8.31	9.59	10.01
15	9.83	9.88	8.33	8.74	9.16	8.71	6.11	7.95	9.20	8.40	9.57	10.04
16	9.85	9.75	8.00	8.80	9.18	8.36	6.30	7.82	9.18	8.52	9.56	9.98
17	9.85	9.76	7.69	8.80	9.19	7.92	6.48	7.78	9.18	8.64	9.63	10.00
18	9.80	9.92	7.19	8.88	9.17	7.63	6.45	7.86	9.24	8.74	9.62	9.99
19	9.94	9.96	6.63	8.88	9.16	7.17	6.49	7.93	9.31	8.80	9.74	10.00
20	9.97	9.83	6.26	8.80	9.18	7.04	6.51	7.96	9.29	8.85	9.79	9.96
21	9.96	9.88	5.87	8.96	9.21	6.40	6.61	8.14	9.31	8.90	9.77	10.05
22	9.99	9.87	6.07	9.01	9.24	5.69	6.71	8.17	9.32	8.91	9.74	10.12
23	9.99	9.68	6.22	9.00	9.17	5.02	6.70	8.14	9.38	8.99	9.75	10.12
24	9.96	9.74	6.28	8.90	9.16	4.94	6.85	8.24	9.39	9.01	9.75	10.04
25	9.92	9.63	6.63	8.79	9.28	5.07	6.99	8.31	9.38	9.00	9.79	10.10
26	9.91	9.72	6.86	8.71	9.33	5.16	7.11	8.40	9.33	9.00	9.82	10.10
27	9.94	9.71	7.15	8.97	9.33	5.13	7.21	8.41	8.88	9.15	9.81	10.03
28	10.00	9.93	7.26	9.01	9.26	5.06	7.31	8.41	8.51	9.24	9.79	10.12
29	10.02	9.92	7.36	9.08	---	5.14	7.40	8.46	7.66	9.24	9.88	10.12
30	9.99	9.71	7.60	9.11	---	5.18	7.55	8.55	6.58	9.28	9.90	10.10
31	9.93	---	7.73	9.09	---	5.11	---	8.66	---	9.30	9.92	---
MAX	10.02	10.08	9.21	9.11	9.33	9.44	7.55	8.66	9.39	9.30	9.92	10.12

WTR YR 1978 MEAN 8.67 HIGH 4.94 LOW 10.12

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HYDRO- GEN SULFIDE TOTAL (MG/L AS H2S)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
JUN 21...	1800	780	7.9	11.0	.7	340	0	72	38	21	2.1

DATE	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	ALKA- LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)
JUN 21...	452	0	371	9.1	7.7	10	.8	17	385	392	.00

DATE	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)
JUN 21...	.26	.17	.43	.43	1.9	.04	.00	300	30	7.2

CHEMICAL CHARACTERISTICS AND BIOLOGICAL INDICES OF SELECTED LAKES

The following table lists the lakes at which chemical and physical characteristics and biological indices were obtained during water year 1978. These lakes were sampled to evaluate current conditions and existing or potential problems, determine chemical and physical characteristics of inflow from major tributaries, and provide basic information for determining the necessity for more intensive studies where problems exist. The results of these studies may be obtained by writing to the District Chief, WRD, 975 West Third Avenue, Columbus, Ohio, 43212. The complete study will be available in a separate report to be published in the near future.

412418081110900	LaDue Reservoir	Geauga County
414055084433700	Nettle Lake	Williams County

APPENDIX

Listing of water-quality parameter codes (see NOTICE page 2).

Para-meter Codes	New Terminology -- First line Old Terminology -- Second line
39332	ALDRIN, SUSPENDED TOTAL (UG/L)
39332	ALDRIN, SUSPENDED (UG/L)
01505	ALPHA, SUSPENDED TOTAL (PCI/L)
01505	ALPHA, SUSPENDED (PCI/L)
01506	ALPHA, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
01506	ALPHA, SUSPENDED, COUNTING ERROR (PCI/L)
01105	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)
01105	ALUMINUM, TOTAL (UG/L AS AL)
01107	ALUMINUM, SUSPENDED RECOVERABLE (UG/L AS AL)
01107	ALUMINUM, SUSPENDED (UG/L AS AL)
01108	ALUMINUM, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS AL)
01108	ALUMINUM, TOTAL IN BOTTOM MATERIAL (UG/G AS AL)
01096	ANTIMONY, SUSPENDED TOTAL (UG/L AS SB)
01096	ANTIMONY, SUSPENDED (UG/L AS SB)
39502	AROCLOR, SUSPENDED TOTAL, 1248 PCB SERIES (UG/L)
39502	AROCLOR, SUSPENDED, 1248 PCB SERIES (UG/L)
39506	AROCLOR, SUSPENDED TOTAL, 1254 PCB SERIES (UG/L)
39506	AROCLOR, SUSPENDED, 1254 PCB SERIES (UG/L)
39510	AROCLOR, SUSPENDED TOTAL, 1260 PCB SERIES (UG/L)
39510	AROCLOR, SUSPENDED, 1260 PCB SERIES (UG/L)
01001	ARSENIC, SUSPENDED TOTAL (UG/L AS AS)
01001	ARSENIC, SUSPENDED (UG/L AS AS)
01006	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA)
01006	BARIUM, SUSPENDED (UG/L AS BA)
01007	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)
01007	BARIUM, TOTAL (UG/L AS BA)
01008	BARIUM, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS BA)
01008	BARIUM, TOTAL IN BOTTOM MATERIAL (UG/G AS BA)
01011	BERYLLIUM, SUSPENDED RECOVERABLE (UG/L AS BE)
01011	BERYLLIUM, SUSPENDED (UG/L AS BE)
01012	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)
01012	BERYLLIUM, TOTAL (UG/L AS BE)
01013	BERYLLIUM, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS BE)
01013	BERYLLIUM, TOTAL IN BOTTOM MATERIAL (UG/G AS BE)
03505	BETA, SUSPENDED TOTAL (PCI/L)
03505	BETA, SUSPENDED (PCI/L)
03506	BETA, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
03506	BETA, SUSPENDED, COUNTING ERROR (PCI/L)
01016	BISMUTH, SUSPENDED TOTAL (UG/L AS BI)
01016	BISMUTH, SUSPENDED (UG/L AS BI)
01021	BORON, SUSPENDED RECOVERABLE (UG/L AS B)
01021	BORON, SUSPENDED (UG/L AS B)
01022	BORON, TOTAL RECOVERABLE (UG/L AS B)
01022	BORON, TOTAL (UG/L AS B)
01023	BORON, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS B)
01023	BORON, TOTAL IN BOTTOM MATERIAL (UG/G AS B)

APPENDIX--Continued

Listing of water-quality parameter codes (see NOTICE page 2).

Parameter Codes	New Terminology -- First line Old Terminology -- Second line
01026	CADMIUM, SUSPENDED RECOVERABLE (UG/L AS CD)
01026	CADMIUM, SUSPENDED (UG/L AS CD)
01027	CADMIUM, TOTAL RECOVERABLE (UG/L AS CD)
01027	CADMIUM, TOTAL (UG/L AS CD)
01028	CADMIUM, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS CD)
01028	CADMIUM, TOTAL IN BOTTOM MATERIAL (UG/G AS CD)
00916	CALCIUM, TOTAL RECOVERABLE (MG/L AS CA)
00916	CALCIUM, TOTAL (MG/L AS CA)
07052	CALCIUM 45, SUSPENDED TOTAL (PCI/L)
07052	CALCIUM 45, SUSPENDED (PCI/L)
07053	CALCIUM 45, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
07053	CALCIUM 45, SUSPENDED, COUNTING ERROR (PCI/L)
00683	CARBON, ORGANIC, SUSPENDED TOTAL (MG/L AS C)
00683	CARBON, ORGANIC, SUSPENDED (MG/L AS C)
00688	CARBON, INORGANIC, SUSPENDED TOTAL (MG/L AS C)
00688	CARBON, INORGANIC, SUSPENDED (MG/L AS C)
00689	CARBON, ORGANIC, SUSPENDED TOTAL (MG/L AS C)
00689	CARBON, ORGANIC, SUSPENDED (MG/L AS C)
00694	CARBON, INORGANIC PLUS ORGANIC, SUSPENDED TOTAL (MG/L AS C)
00694	CARBON, INORGANIC PLUS ORGANIC, SUSPENDED (MG/L AS C)
01116	CESIUM, SUSPENDED TOTAL (UG/L AS CS)
01116	CESIUM, SUSPENDED (UG/L AS CS)
28404	CESIUM 137, SUSPENDED TOTAL (PCI/L)
28404	CESIUM 137, SUSPENDED (PCI/L)
28405	CESIUM 137,SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
28405	CESIUM 137,SUSPENDED, COUNTING ERROR (PCI/L)
28412	CESIUM 134, SUSPENDED TOTAL (PCI/L)
28412	CESIUM 134, SUSPENDED (PCI/L)
28413	CESIUM 134, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
28413	CESIUM 134, SUSPENDED, COUNTING ERROR (PCI/L)
39353	CHLORDANE, SUSPENDED TOTAL (UG/L)
39353	CHLORDANE, SUSPENDED (UG/L)
01029	CHROMIUM, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS CR)
01029	CHROMIUM, TOTAL IN BOTTOM MATERIAL (UG/G AS CR)
01031	CHROMIUM, SUSPENDED RECOVERABLE (UG/L AS CR)
01031	CHROMIUM, SUSPENDED (UG/L AS CR)
01034	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)
01034	CHROMIUM, TOTAL (UG/L AS CR)
01036	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO)
01036	COBALT, SUSPENDED (UG/L AS CO)
01037	COBALT, TOTAL RECOVERABLE (UG/L AS CO)
01037	COBALT, TOTAL (UG/L AS CO)
01038	COBALT, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS CO)
01038	COBALT, TOTAL IN BOTTOM MATERIAL (UG/G AS CO)
01041	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU)
01041	COPPER, SUSPENDED (UG/L AS CU)

APPENDIX--Continued

Listing of water-quality parameter codes (see NOTICE page 2).

Para-meter Codes	New Terminology -- First line Old Terminology -- Second line
01042	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
01042	COPPER, TOTAL (UG/L AS CU)
01043	COPPER, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS CU)
01043	COPPER, TOTAL IN BOTTOM MATERIAL (UG/G AS CU)
39362	DDD, SUSPENDED TOTAL (UG/L)
39362	DDD, SUSPENDED (UG/L)
39367	DDE, SUSPENDED TOTAL (UG/L)
39367	DDE, SUSPENDED (UG/L)
39372	DDT, SUSPENDED TOTAL (UG/L)
39372	DDT, SUSPENDED (UG/L)
39573	DIAZINON, SUSPENDED TOTAL (UG/L)
39573	DIAZINON, SUSPENDED (UG/L)
39382	DIELDRIN, SUSPENDED TOTAL (UG/L)
39382	DIELDRIN, SUSPENDED (UG/L)
39392	ENDRIN, SUSPENDED TOTAL (UG/L)
39392	ENDRIN, SUSPENDED (UG/L)
01121	GALLIUM, SUSPENDED TOTAL (UG/L AS GA)
01121	GALLIUM, SUSPENDED (UG/L AS GA)
01126	GERMANIUM, SUSPENDED TOTAL (UG/L AS GE)
01126	GERMANIUM, SUSPENDED (UG/L AS GE)
01516	GROSS ALPHA RADIOACTIVITY, SUSPENDED TOTAL (PCI/L AS U NATURAL)
01516	GROSS ALPHA RADIOACTIVITY, SUSPENDED (PCI/L AS U NATURAL)
01517	GROSS ALPHA RADIOACTIVITY, SUSPENDED TOTAL (PCI/G AS U NATURAL)
01517	GROSS ALPHA RADIOACTIVITY, SUSPENDED (PCI/G AS U NATURAL)
01518	GROSS ALPHA RADIOACTIVITY, SUSPENDED TOTAL (UG/G AS U NATURAL)
01518	GROSS ALPHA RADIOACTIVITY, SUSPENDED (UG/G AS U NATURAL)
80040	GROSS ALPHA RADIOACTIVITY, SUSPENDED TOTAL (UG/L AS U NATURAL)
80040	GROSS ALPHA RADIOACTIVITY, SUSPENDED (UG/L AS U NATURAL)
80060	GROSS BETA RADIOACTIVITY, SUSPENDED TOTAL (PCI/L AS SR/YT-90)
80060	GROSS BETA RADIOACTIVITY, SUSPENDED (PCI/L AS SR/YT-90)
03516	GROSS BETA RADIOACTIVITY, SUSPENDED TOTAL (PCI/L AS CS-137)
03516	GROSS BETA RADIOACTIVITY, SUSPENDED (PCI/L AS CS-137)
03517	GROSS BETA RADIOACTIVITY, SUSPENDED TOTAL (PCI/G AS SR/YT-90)
03517	GROSS BETA RADIOACTIVITY, SUSPENDED (PCI/G AS SR/YT-90)
03518	GROSS BETA RADIOACTIVITY, SUSPENDED TOTAL (PCI/G AS CS-137)
03518	GROSS BETA RADIOACTIVITY, SUSPENDED (PCI/G AS CS-137)

APPENDIX--Continued

Listing of water-quality parameter codes (see NOTICE page 2).

Parameter Codes	New Terminology -- First line Old Terminology -- Second line
39412	HEPTACHLOR, SUSPENDED TOTAL (UG/L)
39412	HEPTACHLOR, SUSPENDED (UG/L)
39422	HEPTACHLOR EPOXIDE, SUSPENDED TOTAL (UG/L)
39422	HEPTACHLOR EPOXIDE, SUSPENDED (UG/L)
01044	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)
01044	IRON, SUSPENDED (UG/L AS FE)
01045	IRON, TOTAL RECOVERABLE (UG/L AS FE)
01045	IRON, TOTAL (UG/L AS FE)
01170	IRON, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS FE)
01170	IRON, TOTAL IN BOTTOM MATERIAL (UG/G AS FE)
07062	IRON 59, SUSPENDED TOTAL (PCI/L)
07062	IRON 59, SUSPENDED (PCI/L)
07063	IRON 59, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
07063	IRON 59, SUSPENDED, COUNTING ERROR (PCI/L)
39432	ISODRIN, SUSPENDED TOTAL (UG/L)
39432	ISODRIN, SUSPENDED (UG/L)
01050	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB)
01050	LEAD, SUSPENDED (UG/L AS PB)
01051	LEAD, TOTAL RECOVERABLE (UG/L AS PB)
01051	LEAD, TOTAL (UG/L AS PB)
01052	LEAD, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS PB)
01052	LEAD, TOTAL IN BOTTOM MATERIAL (UG/G AS PB)
39342	LINDANE, SUSPENDED TOTAL (UG/L)
39342	LINDANE, SUSPENDED (UG/L)
01131	LITHIUM, SUSPENDED RECOVERABLE (UG/L AS LI)
01131	LITHIUM, SUSPENDED (UG/L AS LI)
01132	LITHIUM, TOTAL RECOVERABLE (UG/L AS LI)
01132	LITHIUM, TOTAL (UG/L AS LI)
00926	MAGNESIUM, SUSPENDED RECOVERABLE (MG/L AS MG)
00926	MAGNESIUM, SUSPENDED (MG/L AS MG)
00927	MAGNESIUM, TOTAL RECOVERABLE (MG/L AS MG)
00927	MAGNESIUM, TOTAL (MG/L AS MG)
39533	MALATHION, SUSPENDED TOTAL (UG/L)
39533	MALATHION, SUSPENDED (UG/L)
01053	MANGANESE, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS MN)
01053	MANGANESE, TOTAL IN BOTTOM MATERIAL (UG/G AS MN)
01054	MANGANESE, SUSPENDED RECOVERABLE (UG/L AS MN)
01054	MANGANESE, SUSPENDED (UG/L AS MN)
01055	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)
01055	MANGANESE, TOTAL (UG/L AS MN)
71895	MERCURY, SUSPENDED RECOVERABLE (UG/L AS HG)
71895	MERCURY, SUSPENDED (UG/L AS HG)
71900	MERCURY, TOTAL RECOVERABLE (UG/L AS HG)
71900	MERCURY, TOTAL (UG/L AS HG)
71921	MERCURY, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS HG)
71921	MERCURY, TOTAL IN BOTTOM MATERIAL (UG/G AS HG)

APPENDIX--Continued

Listing of water-quality parameter codes (see NOTICE page 2).

Parameter Codes	New Terminology -- First line Old Terminology -- Second line
39603	METHYL PARATHION, SUSPENDED TOTAL (UG/L)
39603	METHYL PARATHION, SUSPENDED (UG/L)
39757	MIREX, SUSPENDED TOTAL (UG/L)
39757	MIREX, SUSPENDED (UG/L)
01061	MOLYBDENUM, SUSPENDED RECOVERABLE (UG/L AS MO)
01061	MOLYBDENUM, SUSPENDED (UG/L AS MO)
01062	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)
01062	MOLYBDENUM, TOTAL (UG/L AS MO)
01063	MOLYBDENUM, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS MO)
01063	MOLYBDENUM, TOTAL IN BOTTOM MATERIAL (UG/G AS MO)
01066	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI)
01066	NICKEL, SUSPENDED (UG/L AS NI)
01067	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)
01067	NICKEL, TOTAL (UG/L AS NI)
01068	NICKEL, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS NI)
01068	NICKEL, TOTAL IN BOTTOM MATERIAL (UG/G AS NI)
00623	NITROGEN, AMMONIA PLUS ORGANIC, DISSOLVED (MG/L AS N)
00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)
00624	NITROGEN, AMMONIA PLUS ORGANIC, SUSPENDED TOTAL (MG/L AS N)
00624	NITROGEN, KJELDAHL, SUSPENDED (MG/L AS N)
00625	NITROGEN, AMMONIA PLUS ORGANIC, TOTAL (MG/L AS N)
00625	NITROGEN, KJELDAHL, TOTAL (MG/L AS N)
00626	NITROGEN, AMMONIA PLUS ORGANIC, TOTAL IN BOTTOM MATERIAL, DRY WT (MG/KG AS N)
00626	NITROGEN, KJELDAHL, TOTAL IN BOTTOM MATERIAL, DRY WT (MG/KG AS N)
39543	PARATHION, SUSPENDED TOTAL (UG/L)
39543	PARATHION, SUSPENDED (UG/L)
39518	PCB, SUSPENDED TOTAL (UG/L)
39518	PCB, SUSPENDED (UG/L)
09505	RADIUM 226, SUSPENDED TOTAL (PCI/L)
09505	RADIUM 226, SUSPENDED (PCI/L)
07082	RHODAMINE WT, SUSPENDED TOTAL (UG/L)
07082	RHODAMINE WT, SUSPENDED (UG/L)
01136	RUBIDIUM, SUSPENDED TOTAL (UG/L AS RB)
01136	RUBIDIUM, SUSPENDED (UG/L AS RB)
29633	SCANDIUM 46, SUSPENDED TOTAL (PCI/L)
29633	SCANDIUM 46, SUSPENDED (PCI/L)
29634	SCANDIUM 46, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
29634	SCANDIUM 46, SUSPENDED, COUNTING ERROR (PCI/L)
01146	SELENIUM, SUSPENDED TOTAL (UG/L AS SE)
01146	SELENIUM, SUSPENDED (UG/L AS SE)
07102	SELENIUM 75, SUSPENDED TOTAL (PCI/L)
07102	SELENIUM 75, SUSPENDED (PCI/L)
07103	SELENIUM 75, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
07103	SELENIUM 75, SUSPENDED, COUNTING ERROR (PCI/L)
01076	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG)
01076	SILVER, SUSPENDED (UG/L AS AG)

APPENDIX--Continued

Listing of water-quality parameter codes (see NOTICE page 2).

Parameter Codes	New Terminology -- First line Old Terminology -- Second line
01077	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
01077	SILVER, TOTAL (UG/L AS AG)
01078	SILVER, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS AG)
01078	SILVER, TOTAL IN BOTTOM MATERIAL (UG/G AS AG)
07122	SILVER 110, SUSPENDED TOTAL (PCI/L)
07122	SILVER 110, SUSPENDED (PCI/L)
07123	SILVER 110, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
07123	SILVER 110, SUSPENDED, COUNTING ERROR (PCI/L)
39763	SILVEX, SUSPENDED TOTAL (UG/L)
39763	SILVEX, SUSPENDED (UG/L)
70299	SOLIDS, RESIDUE AT 110 DEG. C, SUSPENDED TOTAL (MG/L)
70299	SOLIDS, RESIDUE AT 110 DEG. C, SUSPENDED (MG/L)
01081	STRONTIUM, SUSPENDED RECOVERABLE (UG/L AS SR)
01081	STRONTIUM, SUSPENDED (UG/L AS SR)
01082	STRONTIUM, TOTAL RECOVERABLE (UG/L AS SR)
01082	STRONTIUM, TOTAL (UG/L AS SR)
01083	STRONTIUM, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS SR)
01083	STRONTIUM, TOTAL IN BOTTOM MATERIAL (UG/G AS SR)
13505	STRONTIUM 90, SUSPENDED TOTAL (PCI/L)
13505	STRONTIUM 90, SUSPENDED (PCI/L)
13506	STRONTIUM 90, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
13506	STRONTIUM 90, SUSPENDED, COUNTING ERROR (PCI/L)
07142	SULFUR 35, SUSPENDED TOTAL (PCI/L)
07142	SULFUR 35, SUSPENDED (PCI/L)
07143	SULFUR 35, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
07143	SULFUR 35, SUSPENDED, COUNTING ERROR (PCI/L)
01101	TIN, SUSPENDED RECOVERABLE (UG/L AS SN)
01101	TIN, SUSPENDED (UG/L AS SN)
01102	TIN, TOTAL RECOVERABLE (UG/L AS SN)
01102	TIN, TOTAL (UG/L AS SN)
01151	TITANIUM, SUSPENDED TOTAL (UG/L AS TI)
01151	TITANIUM, SUSPENDED (UG/L AS TI)
39402	TOXAPHENE, SUSPENDED TOTAL (UG/L)
39402	TOXAPHENE, SUSPENDED (UG/L)
07010	TRITIUM, SUSPENDED TOTAL (PCI/L)
07010	TRITIUM, SUSPENDED (PCI/L)
07011	TRITIUM, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
07011	TRITIUM, SUSPENDED, COUNTING ERROR (PCI/L)
07014	TRITIUM, SUSPENDED TOTAL, COUNTING ERROR (TRITIUM UNITS)
07014	TRITIUM, SUSPENDED, COUNTING ERROR (TRITIUM UNITS)
07016	TRITIUM, SUSPENDED TOTAL (TRITIUM UNITS)
07016	TRITIUM, SUSPENDED (TRITIUM UNITS)
22705	URANIUM, NATURAL, SUSPENDED TOTAL (UG/L AS U NATURAL)
22705	URANIUM, NATURAL, SUSPENDED (UG/L AS U NATURAL)
01086	VANADIUM, SUSPENDED TOTAL (UG/L AS V)
01086	VANADIUM, SUSPENDED (UG/L AS V)

APPENDIX--Continued

Listing of water-quality parameter codes (see NOTICE page 2).

Parameter Codes	New Terminology -- First line Old Terminology -- Second line
01091	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN)
01091	ZINC, SUSPENDED (UG/L AS ZN)
01092	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)
01092	ZINC, TOTAL (UG/L AS ZN)
01093	ZINC, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS ZN)
01093	ZINC, TOTAL IN BOTTOM MATERIAL (UG/G AS ZN)
01161	ZIRCONIUM, SUSPENDED TOTAL (UG/L AS ZR)
01161	ZIRCONIUM, SUSPENDED (UG/L AS ZR)
39733	2,4-D, SUSPENDED TOTAL (UG/L)
39733	2,4-D, SUSPENDED (UG/L)
39743	2,4,5-T, SUSPENDED TOTAL (UG/L)
39743	2,4,5-T, SUSPENDED (UG/L)

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*USGPO: 1979 — 659-407/13

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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
	Length	
inches (in)	2.54×10^{1}	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^{0}	kilometers (km)
	Area	
acres	4.047×10^{3}	square meters (m^2)
	4.047×10^{-1}	square hectometers (hm^2)
	4.047×10^{-3}	square kilometers (km^2)
square miles (mi^2)	2.590×10^{0}	square kilometers (km^2)
	Volume	
gallons (gal)	3.785×10^{0}	liters (L)
	3.785×10^{0}	cubic decimeters (dm^3)
	3.785×10^{-3}	cubic meters (m^3)
million gallons	3.785×10^{3}	cubic meters (m^3)
	3.785×10^{-3}	cubic hectometers (hm^3)
cubic feet (ft^3)	2.832×10^{1}	cubic decimeters (dm^3)
	2.832×10^{-2}	cubic meters (m^3)
cfs-days	2.447×10^{3}	cubic meters (m^3)
	2.447×10^{-3}	cubic hectometers (hm^3)
acre-feet (acre-ft)	1.233×10^{3}	cubic meters (m^3)
	1.233×10^{-3}	cubic hectometers (hm^3)
	1.233×10^{-6}	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	2.832×10^{1}	liters per second (L/s)
	2.832×10^{1}	cubic decimeters per second (dm^3/s)
	2.832×10^{-2}	cubic meters per second (m^3/s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm^3/s)
	6.309×10^{-5}	cubic meters per second (m^3/s)
million gallons per day	4.381×10^{1}	cubic decimeters per second (dm^3/s)
	4.381×10^{-2}	cubic meters per second (m^3/s)
	Mass	
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons